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# MOTOR AGE

Vol. IX No. 1

CHICAGO, JANUARY 4, 1906

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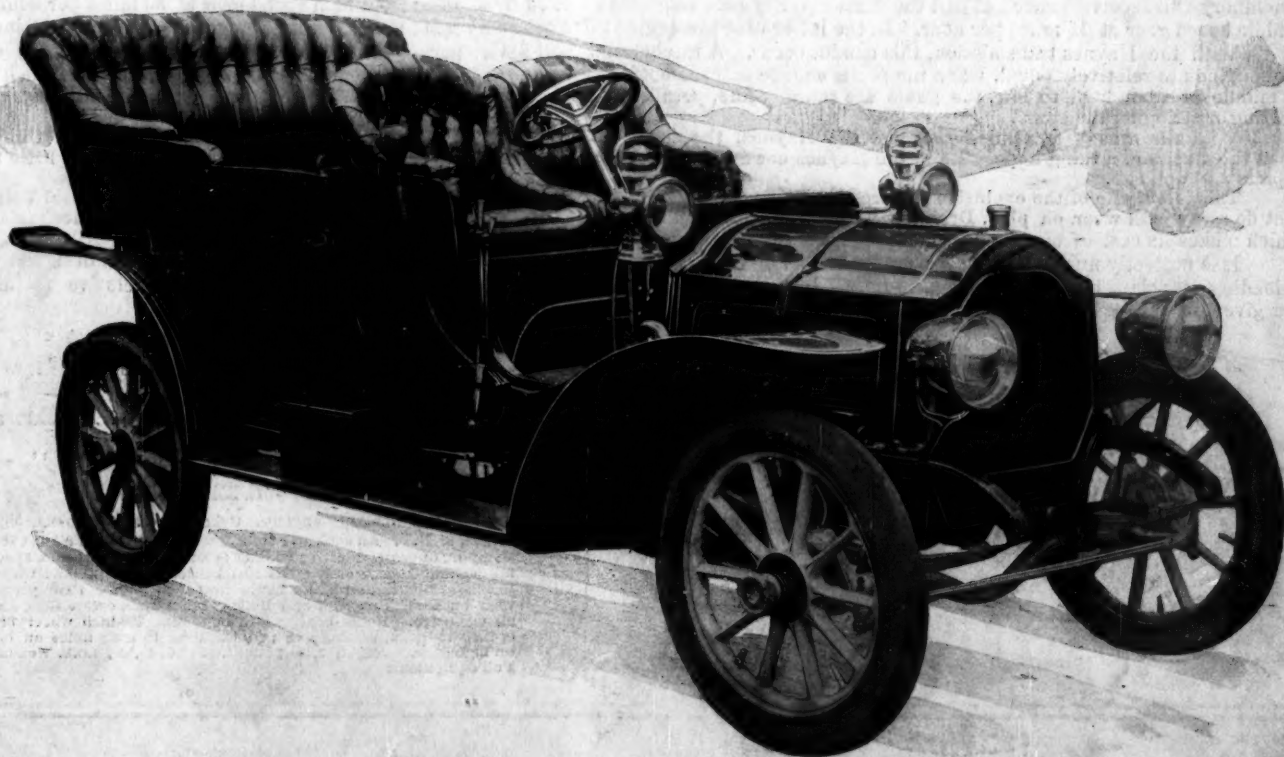
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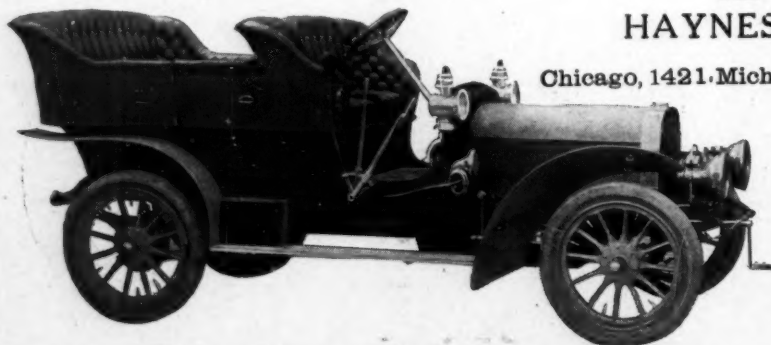
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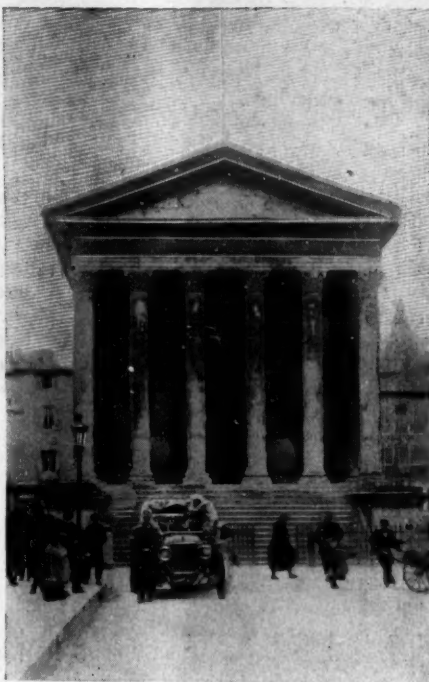
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## HOLIDAY TOURING IN SOUTHERN EUROPE

M R. and Mrs. Walden W. Shaw, of Chicago, looking at the cold, gray skies of a northern American December, cannot help but compare the present holidays with those of just a year ago, when they were in Paris, preparing for an automobile ramble through France, Italy and Spain. It must be with regret that they look back at that delightful outing, for their motor trips at the present time are confined to short dashes from their Fifty-first boulevard home down town and back, wrapped in rugs, in their big Panhard. Readers of MOTOR AGE will remember that in the issue of November 23 the trip of the Shaws from Paris to Nice was described, but at that time only half the story was told, for no details of their delightful journeys into Italy and Spain, using Nice for a base of supplies, were given.

After getting to Nice and renting a villa there, in which they installed little Miss Shaw and the nurse, the Chicagoans proceeded to sally forth in search of adventure, selecting Italy for the first foray. It was on February 15 that they started off—a beautiful warm day, in marked contrast to those the Shaws are experiencing now. On this trip they took with them J. F. Zahnn, of Toledo, and as the big car swung down the Cornich road headed for Menton the joys of winter automobiling struck them most forcibly. Just before they crossed the border into Italy they encountered the custom officials, who exacted a tribute of \$22, sealed the car with a cord and lead seal, attached in front to the spring hanger, and allowed the tourists to proceed, with the assurance that the \$22 was simply a guarantee of good faith and would be returned upon their leaving Italy.

All this took time and it was 10 o'clock when they swung away from the blue Mediterranean at Ventiniglia and went up



MAISON CAIRRE, RELIC OF EARLY ROME

the valley de la Royal over the Col de Tenda. Here was a remarkable experience, for the road was such a winding one that they made fifteen turns before reaching the mouth of the tunnel, sometimes almost retracing their steps. It was in this tunnel that they received a mild scare. As they passed through two iron doors swung after them and they left behind a country smiling in the sunlight and verdure everywhere, and plunged into a dark passage, dripping with water and dimly lighted by incandescent lights about 50 feet apart. Thinking the tunnel was a short one, the lamps on the car were not lighted, but as the hole seemed endless a stop was finally made and a match brought on partial daylight in the dark and moist tunnel.

On and on they went and still no welcoming gate and the occupants of the tonneau began to think they were going through to China. Finally, after traveling 6 miles, the lamps on the car showed iron doors in front and a toot on the horn opened them, allowing the tourists to emerge into a snow-bound country piled 6 feet high on each side of the road. The descent was down the same kind of a wind-

ing road as was climbed on the other side. This road brought them to Cuneo. At Lazarrini they stopped for lunch and a view of the landscape. On three sides were towering mountains and before them lay a perfectly level country, good to look on but poor to travel over, for the roads were nothing to brag of.

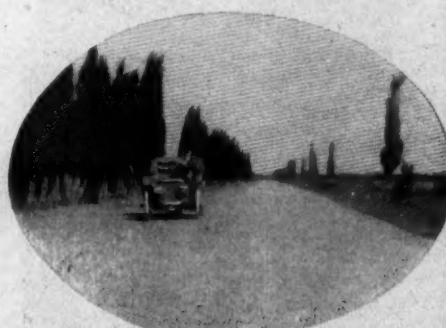
From this point on they saw nothing more of the mountains, but drove through a level country, passing on the way many shrines, with painted saints on them, that lined the road. Savigliano and Carmagnola were passed through and the stop for the night made at Turin, nearly 200 miles from Nice—not a bad day's trip.

Before leaving for Turin the next day the tank was filled with gasoline and Mr. Shaw had to dig for \$18, the price demanded for the fuel. A visit was also made to the Fiat factory. The roads were rocky and full of ruts and it seemed as if they had to pass at least 1,000 carts, but they progressed at that and went through Chivasso, Cigliano, Verelli, Novara and Magenta before reaching Milan, at 4:10 p. m., a distance of 100 miles.

Of course, it would not have done to have left Milan without seeing the cathedral, so that historic place was visited, as were the cavalry barracks, where they saw "The Last Supper," by da Vinci, the cemetery and the arch. This took until lunch time, after which it was \$16 more for gasoline. Genoa was the next place in view and the Shaws got going about 2 p. m. About 15 miles out of Milan they ran across the Monastery Chartreuse, from which the monks were driven in 1860. In the chapel, beautifully decorated with mosaics and paintings, was the famous painting, "The Death of Christ," by Borgognini. Leaving at 4:30, they passed through Pavia, Vochera, Tortona and Nova



THE LANDES NEAR BAYONNE



ROAD FROM AIX TO ARLES



A PICTURESQUE OLD STONE BRIDGE AT VILLENEUVE

Ligure and from there over the mountains into Genoa. The Americans were advised not to try the pass in the dark, but as the moon was shining brightly they decided to make the attempt. The big gas lamps were lit and by careful driving the sharp turns and narrow passages were successfully negotiated, and they at last saw the lights of Genoa lying far below them. The descent was carefully made and after following an electric car line for miles they arrived at the Grand Hotel Savoie at 8:45 p. m. Distance, 106 miles; 4 hours 15 minutes running time.

Next morning, while waiting for the car to come from the garage, Mr. and Mrs. A. M. Harmon, of Philadelphia, touring to Rome in a 35-horsepower Panhard, came up, introduced themselves and were invited to join the party. This was a day marked by punctures, for the right back tire went wrong soon after getting out of town and a new inner tube had to be put in. Another 5 kilometers and there came a blow-out. This time there wasn't any inner tube in stock, so it was necessary to run on a flat tire to Varazze, where they had lunch and patched the tube, leaving at 3 p. m. Then came Savona, Porto Maurizio, San Remo, Bordighera and Ventimille. There were several delays of half an hour at railroad crossings, made necessary by

the stringent regulations which close the gates 10 minutes before the train is expected, and will not permit the gates to open until the train has passed. Italian trains always being late, good time cannot be made. A 10-minute stop was made at the custom house to clear the car. Supper was had at Menton, and as the party was on the home stretch no lengthy stop was made, Nice finally being reached at 10 p. m., the distance for the day being 175 miles. This wound up the Italian jaunt.

From February 18 to April 5 the Shaws stayed in Nice, as this was carnival time. Then a trip through the southwest of France and Spain was planned. Gasoline was taken on at Aix, a little over a century from Nice. At Lançon was the old Roman camp, a wonderful walled place, full of historical interest, which could only be reached on foot. Arles, further on, had for its attraction a Roman amphitheater, where they now hold bull fights every Sunday in summer. There was also the old Roman theater to see. Nîmes, the stop for the night, was reached at 4:20 after a fierce battle with the wind—a regular French mistrel, which blows 3 days at a time, blowing the dust along the roads and so strong that it often caused the car to swerve from its course. Nîmes is a beautiful city, rich in parks and well laid out, with an arena similar to the one at Arles. The Roman baths are interesting, as well as a spring where bottom has never been reached. The temple of Diana is also located here.

The Shaws went from Nîmes to Agues Mortes, the best preserved walled city in France. To reach it they followed for miles a road that led through a swamp, the highway having a stone wall on each side. Agues Mortes looks like a prison and is surrounded by a moat, which, however, has been filled up. There are ten gates leading into the town, which, in the middle ages, was used by the crusaders. Using the moat for a road, the Shaws circled the city to the sea, then entered, stopping at a brasserie for coffee, taking in a statue of St. Louis in the public square after the refreshments in the cafe.

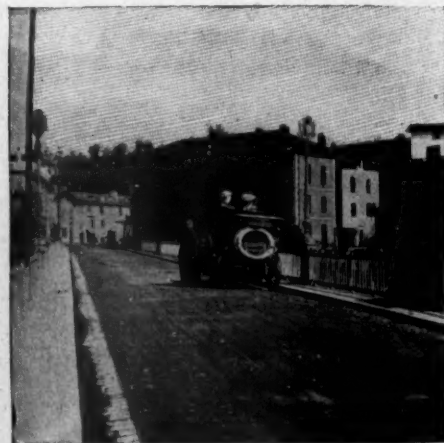
Mount Pellier, next after Agues Mortes, has for its treasure a triumphant arch, located near the barracks. There is also an interesting old aqueduct which is still used. The mistrel continued blowing, and, fighting the dust, they came to Narbonne. From here on the road ran through a country rich with vineyards and along the highway were hundreds of wine carts.

Another walled town was discovered on the third day of the trip—at Carcassonne. The old town, with its walls and its turrets, is on a hill and the new town on the other side of the river Aude. There is a double row of fortifications surrounding the old town, with a road between them. In the middle of the town is an old chateau now used by soldiers. Toulouse, 110 miles from Narbonne, was the stop that night.

Full of interest was the fourth day from Toulouse to Lourdes. By this time the Pyrenees mountains had hove into sight and they loomed up big in the distance, snow-capped and majestic. At Montrejean the Chicagoans enjoyed the pleasant sensation of having to pay 20 cents for garage toll. Before reaching this place they stopped at Capoen and watched women shear sheep, and at Bagnères-de-Bigorre they ran into market day and a cattle sale. Lourdes offered poor hotel accommodations—candles and supper in the parlor. The sights of the town were interesting, though—the grotto and Notre Dame de Lourdes. Pau was next on the list and here they picked up the Calvin Smiths, whom they were expecting. Spain was not far away then, and on the sixth day the enlarged party headed for the frontier, being delayed a bit by another puncture. Passing through Bayonne they reached Biarritz, where a stop was made for lunch. New tires, inner tubes, etc., were purchased, as the roads in Spain were supposed to be worse than those in Italy. Through the kindness of M. Lafitte a card to the Spanish customs guaranteed the return of the car, and avoided all the red tape. At Hendaye, the French frontier, where they had their passport vised, they crossed to Spain by a bridge, the center of which was the frontier line. A short delay at Irun, the Spanish frontier town, and they hurried on to San Sebastian. After running a few miles they were stopped by a man in a gorgeous uniform, who demanded a road tax of 3 pesetas. This was repeated daily while the party was in Spain.

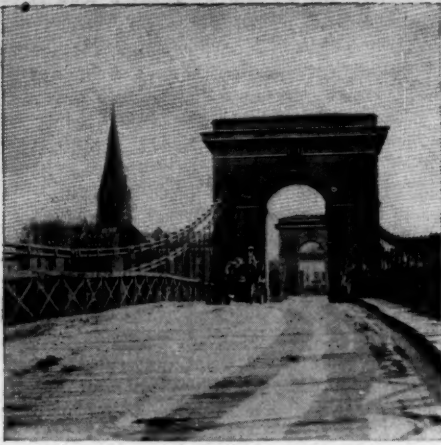


ROAD RUNNING TO AIX



SPANISH-FRENCH FRONTIER





BRIDGE AT VILLEFRANCH

Spain struck the tourists as peculiar—queer towns, with the buildings—some of them five and six stories high—huddled together into a small area and with hundreds of children in the streets. San Sebastián was reached for the night, and the next day—the seventh—the Americans had a lively time. It rained and they got stranded out in the road by cylinder trouble. Mrs. Shaw and Mrs. Smith started foraging for food and in a road house near a station they found beans and soup cooking. Securing a quantity of this food by means of signs, the women went back and all ate out of one big dish, while a mob of children watched them. After it was all over it was discovered that the breakdown had been occasioned by the magneto chain slipping, a simple repair that could have been made in 15 minutes if they had only known. The stop that night was at Bilbao. This was included in the circle the Americans were making, which was to carry them back to San Sebastián. Leaving Bilbao early in the morning they took the ocean road, which wound around the face of the cliffs and followed the coast line. A detour of 40 miles was made in order to see a most remarkable preserved castle at Plencia. The return road was much longer, as it followed the coast. The last 40 miles were made in the dark in a driving rain storm, and was a ride the Shaws will always remember as long as they live. The road was blasted out of the face of the cliffs, which at some places rose straight up hundreds of feet, and in the flashes of lightning they could see these cliffs towering above them while the Atlantic roared and dashed at the base. At places the road dips almost to the surface of the ocean, when they could feel the spray, and then it climbs two or three hundred feet above. Passing through a tunnel several hundred feet long, they were in the outskirts of San Sebastián. On reaching the hotel, at midnight, they were welcomed by the proprietor, who was expecting them, with the good news that dinner was waiting.

While this midnight spread was thoroughly enjoyed the tourists hardly got the fun out of it they had at lunch. Without any definite idea when they started out where they would break their fast at noon, the Yankees finally stumbled on a little town, one so small indeed that the name has entirely slipped their memory. It didn't look particularly inviting, but the

foragers finally found a woman who spoke English. It was like a letter from home after the babel of tongues they had encountered, and the women folk eagerly enjoyed their talk with their hostess. Indeed, so good did the English sound that Mrs. Shaw and Mrs. Smith invaded the kitchen and assisted in the preparations for lunch, Mrs. Shaw showing her hand had lost none of its cunning by preparing the asparagus. With the dinner cooking safely on the stove, the American women ventured for a little excursion through the town, returning for what proved to be a very appetizing meal—first eggs, then chops, potatoes and asparagus, and winding up with wine and coffee. That English-speaking woman stands out in their memories like an oasis in the desert.

Leaving San Sebastián for Bordeaux, the next day, the Yankees had to again pass through the custom house to get back into France. Their route lay through Bayonne and led through the landes over miles and miles of pave, with dense forests of pine trees on each hand. They ran away from two storms, but at Arcachon, where the international motor boat races are held, they had another puncture. They left here at 7:45 p. m. for Bordeaux, expecting to enjoy a moonlight ride. But it was puncture after puncture that they encountered—five for the day—so the ride was anything but enjoyable. The last one occurred in front of the old Chateau Brian and the tired women sat by the roadside until 12:30 a. m. before the leak was fixed.

On this day's trip they were greatly impressed with the huge turpentine forests, as they were called. Centuries back, when the road makers started laying the foundation for France's magnificent highway system, they were confronted with miles and miles of loose, shifting sand throughout this section. A road laid out was soon ruined by the movement of the sand, and how to stop this shifting was an engineering puzzle. Finally some bright mind among the ancients hit upon the idea of planting pine trees on each side of the road to keep the roadbed from deserting. This was the foundation of the great for-



AN ITALIAN PONTOON BRIDGE

ests that are found there now and which enable France to be a factor in the production of turpentine. As the car whirled along the occupants were enabled to watch the process of gathering this crude material from which turpentine is made. Women are employed almost exclusively, and it was an interesting sight to see them gathering and then emptying the cups attached to the trees into a box, and from there to a barrel. There was no complaint to be made of the road, either, for the man who thought up the tree scheme reasoned right, for they do their duty and the sand no longer raises hob with the highway.

Two more punctures were encountered going to Villeneuve the next day. This place is best described by Mrs. Shaw, who declares "the principal occupation is prunes." That tells the story in a nutshell. On the way to Villefranche, on the eleventh day, they passed over roads that were really rocky, literally as well as figuratively speaking. All the country was rock and the road so curving that slow progress was made. To Nîmes it was a climb most of the time. The scenery was beautiful, but although it rained most of the time the tourists enjoyed every moment of the entire day's journey.



THE BUREAU DE OCTROI AT CAHORS



AQUEDUCT AT PONT DU GARD

The tourists left Villefranche at 8:30 o'clock in the morning, with the weather conditions anything but flattering. It was decidedly dark and gloomy overhead, with the disagreeable cold that generally accompanies such sky conditions. But this did not cause the Americans to lose their desire for touring—not even the mountains looming up big ahead making them wish to lay over a day in Villefranche. Right from the start it was a climb. It was up and down, up and down, until lunch, and when they were among the clouds it rained. They passed through Le Pont de Salars Millan, where a stop was made at the Grand Hotel du Commerce for lunch, which was served in a pretty dining room lighted from above by a skylight. After a stop of an hour and a half the trip was resumed to Nimes, the road leading through a gorge, with high, rocky mountains walling it in all the way, with a torrent raging alongside the road. The scenery was tempting, but the rain compelled them to put up the top. Still, it was possible to get a peep out once in a while.

It had been the intention to stop at Le Vigan that night, but the car was making such good progress that when that place was reached at 5:30 Mr. Shaw determined to push on to Nimes, which was reached at 7:30 p. m.

The thirteenth day of the trip was the wedding anniversary of the Shaws. They started for the Pont du Gard, an old Roman aqueduct and bridge that spans the river. A ramble across and through the aqueduct was enjoyed and then the travelers took the road to Avignon, the ancient city of the popes, which reminded them of the ruins of Pompeii. After an

anniversary dinner the Smiths took the train for Paris and the Shaws prepared for the last day's run back to Nice. After several more tire accidents in the run from Avignon to Nice the villa was reached, but no Marget was found. Little Miss Shaw and the nurse were on the promenade, though, and how good the little one looked to father and mother after 2 weeks! The total mileage for the whole trip was 1,900 miles, or 3,040 kilometers.

After staying in Nice 3 days, during which time they closed the villa, Mr. Shaw and the chauffeur started for Paris, leaving Mrs. Shaw to come up on the train with the baby, nurse and maid. They left Nice at 12 noon Easter Sunday, arrived at Valence at 8 p. m., a distance of 393 kilometers; left Valence at 8 a. m., arrived at Sens at 6 p. m., distance for day 439 kilometers; left Sens at 9 a. m. and arrived at Paris at 10:30 a. m., distance 112 kilometers; total distance, 998 kilometers; total time, 19 hours 30 minutes, not counting stops for lunch, gasoline or oiling. This is an average of 32.9 miles per hour for 625 miles. The record is 17 hours. During the trip they crossed three ranges of mountains.

On this trip Mr. Shaw passed over the Fontainebleau course, which will probably be used next summer for the big French road race, which is designed to take the place of the Bennett cup event. It is a route running through a thick forest, the roads being described as grand and winding

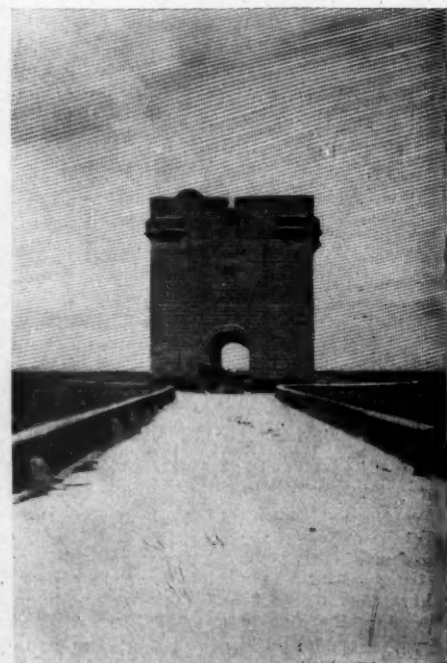
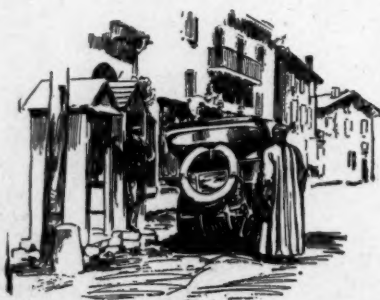
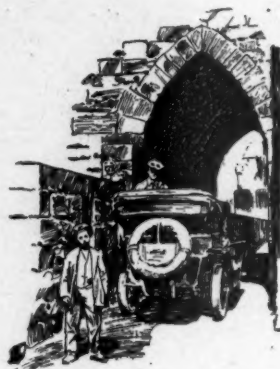
in and out through a magnificent forest. It is within a short distance, too, of Paris, so Mr. Shaw thinks it will result in a record crowd seeing the contest. It is only some 30 miles out of the metropolis. To look at it in cold print, as seen on a road map, it does not look particularly inviting. It measures probably 55 miles and is divided into three circuits, all of which converge at

Fontainebleau. The start will be made here, taking in Melun, Pringy, Chailly, and then to Fontainebleau for the first circuit. Then the road switches to Arbonne, Acheres, Ury and to Fontainebleau again. Then it goes through la Croix-Saint Herem, la Croix Montmorin and finishes at Fontainebleau, making a course that will have to be covered many times, yet being particularly interesting from the standpoint of the spectator.

"Touring Europe is certainly enjoyable," said Mr. Shaw, in talking of the long ramble, which included jaunts through four countries—France, Spain, Italy and England, "but if you go over there without previous knowledge of what the conditions are regarding licenses, roads and such, you are certainly up against it. This

scarcity of touring knowledge was shown in the instance of Sir John Thornycroft. There he was, a leading manufacturer of English automobiles, and even he did not know the customs. It was his first tour, though, so he may be excused, and it was with great pleasure that I supplied him with the knowledge I picked up in my rambles. So far as I could find out, there is no one publication which gives you the information you want, although I must say the road maps over there are certainly complete, every little town being marked down, the best routes outlined and the distances between each town put down in kilometers. A book on this subject, however, would not be out of place and would save Americans crossing with touring intentions lots of bother.

"I took particular pains to find out everything that would be of benefit to me from a touring standpoint—how to go about getting my driver's license, the passport regulations, cost of gasoline, where the best scenery was to be found, and all such data. I found the frontier officials very courteous and obliging and willing to save the tourists unnecessary bother. What impressed me most, though, was the carefulness of the examination I had to take in France before I got my license. The minister of mines controls this and an application to him brought me a set of papers to fill out, in which I had to state the power of my car, its speed possibilities, my previous experience at driving, etc. This, however, did not produce the license. The minister sent an expert to wait on me, and I had to take him out in my car to prove my ability. He put me through a severe course of sprouts for 15



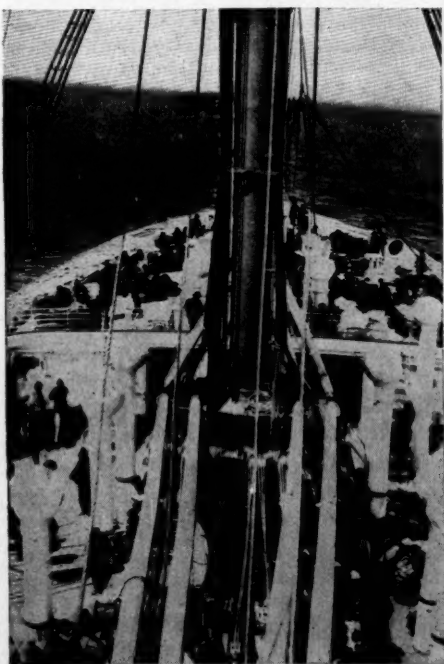
AGUES MORTES' FORTIFIED ROAD



miles. He sought the hills and I had to show him how quickly I could bring my car to a stop, how I could avoid obstacles in the road, and all that. Then came another wait of a week and then the paper that gave me permission to travel through France without being molested by the police, an open sesame that was worth all the trouble I was put to to get it. With such a severe examination it is no wonder they are allowed to travel so fast on French roads and that there are so few accidents. Every driver there knows his business and the authorities know he knows it."

The Shaws wound up their invasion of Europe with a short dash through England, which comprised a run from Folkestone to London, where they passed some time sight-seeing in the English metropolis and taking it easy after their continental trip.

The English experience was one that the Shaws would gladly have made longer if such a thing had been possible. They had loitered in Paris several days before starting for Boulogne where they were to take the boat to cross the English channel. Finally they left the gay French metropolis one morning at 10:30 o'clock. The weather man was against them, however, and it was through a driving rain storm that they hiked along. It was decidedly a wet experience and everyone was glad when Beauvais was reached at lunch time, where clothes were dried and a good meal disposed of. Then the trip to the sea was resumed, but it was no trouble at all to make Boulogne early in the afternoon. There was no hurry, for the channel was not to be crossed until the next day, so the evening was spent in sight seeing. After a good night's sleep the Americans hied to the dock and watched the interesting operation of the car being put aboard the steamer. It was loaded on a huge cradle



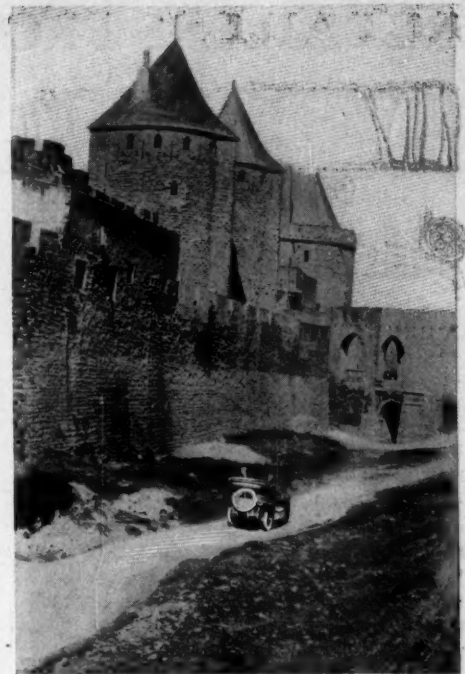
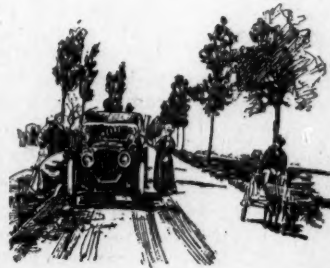
HOMeward BOUND

first, and a huge derrick swung it from the dock over the steamer and then lowered it safely to the deck. Every care was taken to see that no damage was done. The car going over in the same steamer with the tourists assured them of having their machine for use immediately upon landing on English soil. This transfer of the car cost \$20, but the money was well spent, for the voyage was made without the car being damaged in the least. It was unloaded on the other side in much the same manner. The passport having been viséd at Boulogne no duty was required.

But Mr. Shaw found himself in Great Britain without a license. An appeal to the police resulted in the issuing of a permit intended for temporary use which was to carry them as far as Maidston, where the regular papers could be secured from the English authorities at that city. But when that town was reached everything was going so smoothly that the Shaws determined to take a chance, so no stop was made for a license. They passed several policemen on the road, but nothing was said, London being reached, where, before the return, a license was secured. The trip from Folkestone to London was a short but interesting one. They did

not leave the seaport until 3:30 in the afternoon and 5:30 found them safe in the metropolis. They had made the journey in 2 hours, the same time as it took the train to cover the distance.

England's rules of the road requiring drivers to keep to the left confused Mr. Shaw for some time. He had always been used to keeping to the right, but before he left Folkestone he had been cautioned about the English peculiarity, so on the road he kept saying to himself, "Keep to the left, keep to the left." The constant repetition of this phrase kept him on the alert, but once it slipped his memory and nearly got the party into trouble. It was on a particularly inviting stretch of road, the highway making a wide curve. The left idea was uppermost in Mr. Shaw's mind until just before reaching the crest of the curve. As he swung around the bend he saw another car coming toward him on the same side of the road, the American having unconsciously cut across in taking the turn. But here it was that the long experience in handling a big car in all sorts of ticklish situations stood the Yankee in good stead. Keeping his wits about him he stuck to his wheel. The other fellow, too, knew what he was about, so the two machines, going at a fast clip, passed so close to each other that the hubs almost grazed. That was lesson enough and for the rest of the brief stay in England the Shaws did not have to tie strings around their fingers to tell them which



INNER MOAT AT CARCASSON

side of the king's highway was left.

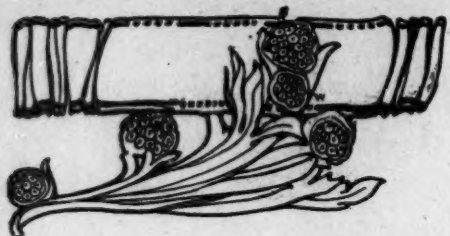
Four days were spent sight-seeing in London, then the Americans decided to return to France, but picked out a different route to go to Folkestone. They decided on the Old Kent road, but it took them a good 2 hours to get outside of London because of the heavy traffic. It was a roundabout way, this bit of an excursion over the historic road, but the highway was smooth and the weather fine, so no one worried and Folkestone was reached at 8:30 p. m., 3 hours 30 minutes after leaving their London hotel. The next

morning the channel was recrossed. On the boat going over the Shaws met Sir John Thornycroft, the English car manufacturer, who was on his way for his first continental tour in an automobile. Sir John was fully posted on French, Italian and Spanish roads by Mr. Shaw and gratefully accepted one of the road maps from the kit of the Americans.

From Boulogne the Chicagoans hastened back to Paris and for several days they used the car visiting the sights in and around the capital, so that it was nearly the first of June before they thought of making their home plans.

Finally the car was temporarily put out of commission, packed in a huge crate and loaded on the steamer, homeward bound. The next they saw of it was in Chicago when Mr. Shaw claimed it. It is now a familiar sight on the streets of Chicago, being easily distinguished by the many tags on the back, reminding one of a dress suit case which has done Europe and come home properly certified to in the way of foreign labels. It is a pleasing break in the monotony of the string of automobiles passing up and down Michigan avenue.

# RETAILERS PROSPER DURING YEAR JUST ENDED



## Reports from Principal Cities in the Union Show Automobile Trade To Be in Healthy State



NEW YORK, Jan. 2—No better answer to the question of the success of the automobile trade in New York in 1905 can be given than in the unparalleled preparations being made for the marketing of the home and imported products of 1906. The big boom, which local tradesmen are preparing so lavishly to meet, is builded on actual results of the season and business in sight evidenced by orders already booked, and not in the mere hope of great things to come, born of a contagious elation arising from the contemplation of the prosperity of the lucky ones.

It has been a great year for the brokers in Wall street, which is always a leading factor in the expenditure of Manhattan money for luxuries, and this prosperity has extended to all classes. There never has been so big a Christmas shopping season as this and a jeweler told the writer yesterday that Maiden Lane and John street have never known so big and so universal a boom. All this has tended to add substance and weight to the automobile avalanche that has rolled through the streets of the motor car district.

Two years ago \$7,000 was a top notch rental for a sales headquarters. Now, with the rush to the upper Broadway district, which is practically universal, this figure represents only a single salesroom or a place on a side street. High class establishments are bringing from \$10,000 to \$15,000, and this is not considered an extravagant outlay for an agency of average prominence. The great and palatial garages built by or for Smith & Mabley, the American Locomotive Co., the Decauville Automobile Co., and Hollander & Tangeman represent an annual charge ranging from at least \$25,000 to \$30,000 and perhaps a bit higher. Garages and salesrooms are now pretty thickly scattered along Broadway from the Packard place at Times square to Fifty-third street and from this point on as far as Sixty-sixth street, the white lane is now being given up so far as business buildings go to the automobile. One might aptly dub Broadway from Times square to Sixty-second street automobile alley, and one must remember that each side street for a block each way also has its quota of smaller establishments ranging from three to five each. The building of the automobile club's great house now in progress of erection on Fifty-fourth street to the west of Broadway has had much to do with the centralization of the trade on upper Broadway.

By show time most of the new garages will be completed and occupied. There seems to be every chance that automobile alley will become a rendezvous of motoring enthusiasts and that the garage keepers will see it to their advantage to

keep their establishments open in the evenings, at least during the rush season up to June and perhaps July.

Statements and estimates of the actual volume of business done by the leaders during the past season must necessarily in this review have as their basis general trade talk, which is perhaps more trustworthy as a whole than competitive statements. Common report, which is of a higher grade of authenticity than mere rumor, is the foundation of the figures the writer has the temerity to use.

MOTOR AGE readers well know, of course, of the condition of the New York trade, which has resulted in the demand for four-cylinder cars far outstripping that for runabouts and cars of the so-called cheap variety. It must not be understood, however, that the low-priced brand has given way more than comparatively to the high-priced article.

It is pretty generally admitted that the Cadillac has led all others in the numbers sold. In round rough liberal figures the agency has disposed of 250 of the small cars and fifty of the four-cylinders. In the same field one can place without much danger of dispute the Ramblers as the runners-up to the Cadillac in numbers. Of the small car purveyors these two are the undaunted leaders.

Among the touring cars of the \$2,000 to \$3,000 class it is pretty certain that the Whites lead. The figures are said to be in the neighborhood of 200. Packards, Wintons and Pope-Toledos probably come next, with the sales above and around 100, and not far behind them the Locomobiles and Pierces. In the third group running neck and neck the Royal and the Thomas may safely be placed. The Franklins have occupied a middle position in a class by themselves between the small and big cars. Franklins are admitted to be among the best sellers in the country. There is no reason to assume that they have fallen behind their general place in line so far as metropolitan favor has gone. Neither report nor rumor, however, seems to have busied itself with quoting figures, so far as the writer has heard in his rounds of the trade. Among the newcomers the Rainier has gained remarkable prominence for a beginner and the Wayne has been pushed with every indication of satisfactory progress.

The Electric Vehicle Co. and C. B. Rice, the Baker agent, have done a big business in electrics, the demand for which is decidedly on the increase. This year's hurrah over the Pope-Toledos has naturally forced talk of the Waverley electrics to the background. It must be remembered that this review is based on common report and rumor, recording surface indica-

tions rather than the undercurrent. The names of individual big money winners on the season most frequently heard are: Carl Page, of the White; Harry Houpt, of the Thomas; Frank Homan, of the Rambler, National and Marmion; W. C. Martin, of the Cadillac; Charley Duerr, of the Royal, and C. B. Rice, of the Baker electric. The guesses at their winnings range all the way from \$20,000 for the lowest to \$40,000 for the highest.

Those who have counted on the big advance in merit and popularity of American machines crowding the European cars into the background have had their prophecies knocked sky-high by actualities. Custom house figures indicate that the day of the monopoly of the American market by the home product is several years away yet, if it ever comes, which is doubtful. There will always be those who, through a desire to make a front, and, as they think, to be ultra-fashionable, will buy the imported article rather than the Yankee-made, and there is every chance of there being enough of them to justify the expensive preparations the leading importers are making to supply the demand. America has progressed and will progress, but it must not be forgotten that the Europeans, who created and had 5 or 10 years' start in the game, will not stand still either. With the home market supplied through increased production, they will turn to this country and make a fight for American trade, to which they have been too busy at home to pay very much attention comparatively heretofore.

Custom house estimates place the number of cars imported during 1905 at over 1,000, of a total valuation of over \$4,000,000. There has been an annual increase in importation of close to 50 per cent in the last 5 years. In accord the importers have fully kept pace with the Americans in trade increase percentages. Of the half dozen leading makes the sales have been limited only by the number of cars it was possible to secure from the French, German and Italian factories. It can hardly be disputed that the vigorous and liberal racing and advertising campaign waged by Hollander & Tangeman has brought the Fiat cars faster and by bigger jumps to the front rank than any other importer can boast. This, however, has not been done at the expense of the other leading European makes, which have lost none of their following, popularity or share in the increase of business thereby. In a quiet way, too, report has it that the Auto Import Co. has pushed the Rochet-Schneider, a car of older vogue, however, than the Fiat, up among the leaders in the custom house column by good salesmanship and probably more favorable shipments than some of the



other importers have enjoyed. Hollander & Tangeman, Smith & Mabley, and the Decauville Automobile Co. have entrenched themselves in palatial fortresses and stocked their lockers with ample ammunition for a battle royal for the leadership in the importing trade. The successful racing campaign inaugurated by the Darraq people on Long Island and to be continued in Florida and Cuba shows also that the Vanderbilt cup winners do not propose to be among the also rans in the race for Yankee dollars.

The 1906 business has begun with a rush that indicates that those looking for a boom next year have not missed their calculations. The White, Winton, Pack-

ard, Pierce, Locomobile, Royal and Thomas people have been the early birds in the hunt and have reaped a golden harvest of orders thereby. The demand among the dealers here for shows not later than December next year is unanimous. The opinion is that such a move would mean a practically all-round selling season and do away utterly with the buying hiatus that hitherto has been deemed inevitable through November, December and January. It is more than whispered that the automobile club and the independents will make a break for a December exhibition next year whatever the A. L. A. M. may do in the matter of a show in the Madison Square garden building.

## QUAKERS ENTHUSIASTIC OVER RESULTS

Philadelphia, Jan. 2.—With nothing but the calendar to indicate just when the season of 1905 ended and that of 1906 began, the concerns which go to make up the local automobile trade are enthusiastic over the results of the former and the prospects for the latter. The principal cause of the good business and the bright outlook has been the weather. With but few exceptions every day since December 1 has been ideal for automobilizing. A few inches of snow early in the month put a temporary quietus on trade, but a warm rain a day or two later removed every vestige of the beautiful, and up to date dry, bracing weather—automobile weather—has been the rule. The impulse continued good weather gives trade is shown in the long list of sales recorded by every agent and branch manager. Of course the storage and repair business booms as long as the weather holds good. Supplies ditto. Meteorological conditions apparently have conspired to make 1905 a banner year and start 1906 business with a rush.

The row last Saturday afternoon presented as busy an appearance as in mid-summer. Every concern was busily engaged demonstrating 1906 cars to probable purchasers. By the way, one infallible indication of the growth of the automobile business here during the past year is the difficulty experienced by factories and agents in securing suitable locations along the row. Already the transverse streets—Arch, Race, Vine—are being scoured by those who, not being able to locate on Broad street, are determined to get within a stone's throw of it. The automobile trade has added hundreds of thousands of dollars' value to the erstwhile ramshackle buildings which marred North Broad street but a few years ago. And the high-water mark is creeping farther north with each succeeding month. A year or two ago Vine street marked the northern limit. Now it's Spring Garden street, with a few houses even north of that boundary line.

Manager Percy Neel, of the Quaker City Automobile Co., is particularly enthusiastic. "A 50 per cent increase over 1904," is the way he summarizes last year's trade—"and indications point to even a better business in 1906," is his prediction for the coming year. "The dreaded between-seasons seems to have been lost in the shuffle. When it arrives it will hardly be long enough to allow us to make some necessary alterations."

Manager Hoffman, of the Ford's local branch, is also sanguine regarding the prospects. "The Ford," he said, "hadn't a fair test in Philadelphia in 1905, owing to the transfer of the local business from Wanamaker's to a branch house in the middle of the season. But if one is to judge of next season's business from the appearance of the order book, 1906 will be a banner year for the Ford hereabouts."

Possibly no one car represented here has been pushed so energetically or so systematically during the past year as the Rambler. Manager W. F. Smith says there are more Rambler cars in this city today than there are of any other one make. Mr. Smith was one of the promoters of the new association which amalgamated with and put new life into the Philadelphia Automobile Trade Association, and to the activity of the latter he ascribes no little of the trade activity of the past four months.

## CHICAGO DEALERS FORCED TO ENLARGE

Chicago, Jan. 2.—As a testimonial of the Windy city's importance as a trade center in the automobile world the local dealers point with pride to the air of prosperity the row bears. New cars are eagerly seeking representation, old dealers are enlarging their quarters or else moving into more commodious places, while the west side of automobile row from Twelfth to Sixteenth streets is almost entirely new because of the buildings either erected or else going up. That the season just over—it's hard for some of the dealers to realize it because of the trade which lasted up to the very end of the year—has been one of prosperity all admit and the modest estimate of 1,200 cars sold here at retail, made by one dealer, is declared by others to be entirely too small. That the season of 1906 will far exceed the one just over goes without saying, local critics contend.

Changes in the local trade have been many. Agencies have been transferred in some cases, but the most notable thing is that many of the big firms apparently prefer to be represented directly instead of through the middleman. The White people have made this sort of a change and Webb Jay is now running a new place on the row. Others to go in for new branches are the Rainier, St. Louis, Berkshire, Smith & Mabley and Ford. All of this, of course,

Another hustler, A. E. Maltby, of the Winton branch, who is president of the Trade Association, voices Manager Smith's opinion as to the value of that organization as a trade booster. He claims a one-third increase in business last year over 1904, and predicts an even greater percentage of gain for the coming twelve-month ahead of the trade.

The Maxwell is another car which has enjoyed a boom in and about the Quaker city during the past season. Under the management of C. W. Kelsey, who is now the Maxwell company's sales agent, the machine has been popularized to such an extent hereabouts that his successor should have plain sailing for the coming season.

George T. Thompson, of the Eastern Automobile Co., is booking orders at a great rate for the 1906 Peerless. That car has met with much success hereabouts during the past season. At 9 o'clock yesterday morning Thompson started a Peerless on a 1,000-mile non-stop grind over a 33-mile course from the garage at 326-40 North Broad street to Ogontz, to Fox Chase, to Bustletown, to Holmesburg, to Ashbourne, to the garage, and the big crowd at the start gives evidence of the advertising value of such events.

The Packard, Locomobile, Royal Tourist and all the other agencies on the row or near it report big business during the past year—"the best ever," one of them put it—and an exceedingly bright outlook for next. Even the comparatively newcomers, such as Foss & Hughes and the Hamilton Auto Co. are enthusiastic over the outlook. Indeed, for the first time in the history of the local automobile trade there is not a single discordant note in the chorus of gratified tradesmen over the banner campaign of 1905 and the very brilliant prospects for 1906.

has caused space on the row to be at a premium and to force the erection of several new buildings. The White opening as far north as 240 Michigan avenue extended the boundary line several blocks and it is expected that before the end of the year there will be several more cut in between the White and the old northern limit, where Ralph Temple holds forth.

Between Fourteenth and Fifteenth streets the new places are going up. McDuffie, Coey and the Ford people concluding that they would rather be under their own roof where they could have more room. Coey has already moved and the others are going before show time. Their stores will not be left vacant long, for there seems to be a dozen after each vacancy.

While the local trade as a whole is pronounced gilt-edged there are cases of dealers who have only broken even, while others have had to suffer a loss, but balancing the lot shows the credit on the right side of the ledger by a large margin.

"While it has been hard sledding for some of the concerns I think those who stuck will be amply repaid the coming season," said one dealer discussing the situation. "Chicagoans are notoriously slow in following the New York pace and it takes about a year for them to get wise and loosen up. Reports from Gotham tell of

big sums paid for cars and such a rush for them that the dealers have to fight to even keep a demonstrating rig. This ought to be the case in Chicago this year. Few of us carried over any stock and the advance orders we have in sight now are enough to represent a good year, even if we do not get anything in the spring and the summer months. We have been singularly fortunate in our weather here and even now, starting in a new year, one can drive around town without any discomfort. This has caused lots of people to buy now instead of waiting until the show and we could make many deliveries of 1906 goods if we could get the cars now. One thing handicaps us in Chicago and that is the streets. You get off

the boulevards and it's worse than out in the country. Then, too, Chicagoans haven't the touring inducements they have in the east; they're like the man in the song—no place to go but out. Altogether there aren't half a dozen attractive runs out of the city and if it wasn't for Sheridan drive I am afraid we would have to go out of business. If Chicago had the streets they would materially increase the business done by Chicago dealers. But, looking on the bright side, I think there is going to be such a demand for cars—and high priced ones at that—that we will be swamped long before summer is here. While runabouts are popular there is even a greater demand for the big machines."

are closed it will be found to have been the red-letter year of the trade in Boston. The conditions in this city are far different from those existing in other sections of the country. The proverbial conservatism of Boston's people is known the world over, and this conservatism has ever shown itself as regards motor vehicles. Slow indeed to realize the advantages of motoring, Bostonians are now getting the best that can be secured, and not only do they find use for their cars in warm weather, but likewise in the winter season, as evidenced by the countless number of vehicles seen in the shopping district and on the highways of the country even when snow is on the ground.

## BOSTON ONE OF THE LEADING MARKETS

Boston, Jan. 2—Boston held its own in the motor mart in 1905, and it must be acknowledged to be one of the leading motoring markets in the country. Boston and its business men have certainly kept pace with the growing importance and influence of the motor vehicle world, so much so that the hub is today more important in the eyes of the manufacturers than ever. In preparing for their season's campaign these manufacturers have come

carriage builders. This advertisement, in bold faced type, announces that this particular firm is ready to do automobile body building and seeks the patronage of those who desire to have special bodies for their cars, either touring, limousine or landaulet bodies. The near future will, judging from present indications, see almost all of the first-class carriage builders making a big bid for this class of trade, which is increasing daily.

to recognize Boston as second in importance only to New York. The year just closing has been most successful in every manner. The local dealers and branches have done a tremendous business, and to the credit and stability of the same it can be said there has not been a single failure. Changes in branch managements and dealers there have been galore in the past few months, but these changes seem to have increased rather than diminished the number of motor establishments. Hardly a week goes by but what announcement is made of the establishment of some new branch or other, and today more than ever can this city be considered as a real motor market. Only one of the many branches that were here in the early part of the season has been abandoned, and that was one representing a foreign-made vehicle, and while the branch office was closed an agency was established, so that this vehicle does not lose its representation in the so-called hub of the universe. While a year ago the agencies and branches were to be found in a comparatively small territory, on and around Columbus avenue, they have broadened out considerably and now it takes one fully 2 days to properly cover and visit the Boston automobile trade. Over on Boylston street, up to and including Massachusetts avenue, automobile garages and salesrooms have been established, so there is not a machine of any importance or fame, foreign or domestic, that cannot be purchased in this city. This, of course, means closer and more energetic competition than ever, although the competition of the past season has been decidedly energetic and lively and no man with the price of a car in his jeans has ever been allowed to escape. One indication of a policy to be adopted by carriage manufacturers who have an eye to business and realize that the automobile is a thing which is to remain is shown in a large advertisement published in one of today's papers by one of the most noted

But to come back to the motor industry in general, the fact remains that never has a season opened up with brighter prospects than has this; that the interest of the prospective purchaser was never more eagerly or generally displayed, and it is safe to say that when the books for 1906

All of the dealers are looking forward to a busy season and have booked orders ahead, at least two of them claiming—and their contentions seem just ones,—that they have virtually disposed of all the cars they can secure this season. One of these is advertising to pay a premium of \$350 for cars of his make held by agents or owners in different sections of the country. The other agent is not advertising to pay a premium on cars but he is doing considerable traveling between Boston and the city in which his car is made.

There is every indication of great activity

all along the line and the man with a little car will this season do as great a business as the man with the big high-powered vehicle.

This is the motor age in all its glory and importance and Boston will the coming year be just as prominent as ever.

## PITTSBURG 1906 SEASON ALREADY OPEN

Pittsburg, Jan. 2—Things are getting busy in Pittsburg this season fully a month earlier than any previous year. Hitherto the date of the New York show has been recognized as the time when the Pittsburg trade formally opened. That auspicious event cuts mighty little figure with Pittsburg buyers this season. They want automobiles—more and better ones than ever before—and they want them quickly. Hardly had the dust ceased to fly on the country roads till they were hot after new models. Not willing to wait for the arrival of the 1906 cars for inspection they made trips to the factories, picked out their choice of cars, came back and then besieged their dealers to hurry up the shipment. Pittsburg has a way of doing things in a hurry and doing them right, too, and the big automobile dealers saw that it was up to them to get exerted and lose no time in bringing the new models to town.

Two other factors contributed not a little to this decision on the part of the dealers. One was that with four or five new companies assured the first of November, they foresaw the keenest kind of competition. Everybody was going to get out for business and lots of it and the only way to do it was to have something to show the prospective buyer. The other was that the automobile manufacturers had kept their eyes on Pittsburg and knew that the tremendous growth of automobile spirit here since the formation of the Automobile Club of Pittsburg 3 years ago entitled Pittsburgers to more con-

sideration than they had received before, especially, of course, as the manufacturers know from experience that these same people from the Smoky city have loads of money and are free to spend it. So the 1906 cars came in early, and for a month or more some of them have been in the city for old and new buyers to study and observe.

Unless a genuine panic in the cash market hits this town there will be at least one-third more cars sold in 1906 than in 1905. The fever is spreading. Automobiling is no longer a rich man's fad, although the rich man who does not now own an automobile is regarded as a little queer.

Automobile sentiment has taken a decidedly new turn in Pittsburg this year. Before this the first flurries of snow have been taken as the signal by a majority of automobilists to put away their cars for the winter. This year winter cars are seen everywhere. They are big and warm and cozy and their owners are encased in the daintiest and most costly winter automobile garments. This winter spirit is testified to not only by the dealers themselves, who report a big call for limousines, but also by the high-class department stores which carry full lines of automobile apparel and who say their sales have been almost phenomenal compared with previous years. Pittsburg wants an all-the-year-round automobile and the dealers are humping themselves to provide them for their patrons.

A significant point about this phase of



the retail trade is that many of the buyers are getting only the chassis. Wealthy men are showing a decided fondness for winter riding and are buying chassis that cost around \$4,000. Many of the latter buyers are having limousine bodies built to order.

The new year is opening most auspiciously for the trade in all ways. There are more firms but there are many more

buyers. The growth of the automobile spirit has been such as to warrant the belief that in the spring buyers will appear in hitherto unheard of numbers in this city. There are more good roads than ever before and more are coming. More good cars are wanted, too, and more women are being attracted to the sport of automobiling. So altogether the Pittsburg dealers are well satisfied with the outlook.

## NORTHWEST TRADE ON FIRM FOOTING

Minneapolis, Jan. 2.—The close of 1905 finds the automobile business of the northwest on a firmer footing than it has been since the first introduction of motor cars in the twin cities. Trade has flourished up to the last days of the old year, and dealers will open up the books of 1906 with hundreds of orders booked for spring delivery, and with prospects of a record breaking business during the first 6 months of the new year. If trade has touched the highest marks during the past year, it is sure to go higher during the coming season. The business of 1906 is not a speculative matter; it is reducible almost to the number of cars that will be disposed of, for dealers have felt out the trade, and are placing their orders with a definite knowledge of what will be disposed of.

One firm in St. Paul stated yesterday, through its president, that sixty-nine cars had been purchased for spring delivery, and that orders would be entered between now and spring for fully twice that number. Factories will be asked for all the cars they can give to the northwest, and the sales are sure to run far ahead of last season, the banner year of the business. From the beginning of 1905 up to the day of its farewell, the season was one of prosperity for northwestern dealers. An open winter has carried the pleasure-driving season up to the very close of the year, and 1906 cars have been delivered for actual service during the last few weeks.

In the cities of Minneapolis and St. Paul hundreds of new cars have been sold, and the demand for increased power and greater durability has forced prices up to a higher level than prevailed a year ago. Scores of big cars, ranging in horsepower from 24 to 60, and selling around the \$3,500 to \$5,000 mark, have been placed during 1905, and the prospect is for a greater demand during the coming season for the same class of car. The greatest sale will be found during 1906, however, for the strong and durable car of from 18 to 24 horsepower, which can be secured for \$2,000, or at the most \$2,500. This class of cars will not take the field away from the larger machines—the man who wants a \$3,500 or \$4,000 car has about made up his mind what he wants, and has made arrangements to get it. Throughout the country districts many runabouts will be sold, and the city trade will take scores of them also, but the larger car has the call for sales, from present appearances.

No one factor has contributed more to the prosperity of the automobile business in the twin cities this year than the activity of the automobile clubs of the two cities. The Minneapolis and the St. Paul clubs have awakened a greater in-

terest in pleasure driving and sport than the most sanguine dealers expected, and plans for greater activity during 1906 have been matured.

Through the activity of the St. Paul club the big race meet of July was pulled off, in connection with the Chicago-St. Paul endurance run. While the latter was a great disappointment, owing to bad weather, it did great good to the automobile game in the northwest. There can be no question that the activity of the clubs is sustaining and fostering the demand for better cars, and is doing away with any prejudice that existed against the big machines. Twin city houses will make an unusual campaign for business

through Minnesota and the Dakotas this year. Two or three houses will have from three to five men on the road constantly, and branch houses will be maintained in several towns. The Pence Automobile Co., of Minneapolis, has branch houses both in North Dakota and South Dakota, and other houses will undoubtedly open branches this year. The more prominent farmers in every community, and residents in the medium-sized towns have the money to put into automobiles and are convinced that they want and can use the machines. Better roads are building every year, and with the establishment of the highway commission in Minnesota, and the prospect of another \$200,000 to be added to the road and bridge fund, the outlook for good roads is rosy.

The twin cities control the trade of the entire northwest, as far as the Rocky mountains, not only on cars, but on many lines of sundries, and on many of the most important tire lines. Twin city houses have become stronger each year, and rank with some of the greatest auto-

mobile houses in the country at the present time. Money is plentiful in Minneapolis and St. Paul, and those who have it seem willing to buy the best the world produces in the line of automobiles. Dealers are not blinded, however, by the demand for pleasure vehicles, to the possibilities of the commercial vehicle business.

"The immediate profits are to be found here in the pleasure car," said one dealer to MOTOR AGE, "but the great permanent business will ultimately be evolved from the demand for commercial cars."

Practically all of the concerns will push the commercial business hard this year. Many big local companies are planning on putting on trucking service this summer, and experimental cars will be put into service by many houses.

Agency appointments are practically completed for the season of 1906. Representatives of many of the big lines were in the city recently, and some of the best cars have changed hands for next season. In the main, however, the agencies are practically as they have been. The Cadillac has gone from the Pence Automobile Co. to the Moulton-Jordan Co. The Pence Automobile Co. had handled the Cadillac

for 3 years. Another important change is the Oldsmobile, which for the past year had been in the hands of F. G. Winston, Jr., formerly the Winston-Walker Co. The Olds goes to the Barelay Automobile Co., local agent for the Thomas Flyer. The Ford agency has gone from Walter Benz to the Northwestern Motor Vehicle Co., and the local agency for the Haynes, which had not been handled here, has been placed with A. H. Eckbergh, agent for the Model. The Haynes Automobile Co., White agent, will push the Dayton-Stoddard as its gasoline car for 1906. A new car will be put out by the Auto Construction Co., to be known as the Murphy Special. At present there is no prospect of a Knox agency in Minneapolis next year, although the car may be taken on later.

Two of the leading cars will be represented in Minneapolis next year by the C. P. Joy Automobile Co., of St. Paul—the Pierce Arrow and the Packard. The same company sold a number of Pierce cars in the city during 1905, and expects to do even better this season.

## WASHINGTON HAD PROSPEROUS YEAR

Washington, D. C., Jan. 2.—There is no doubt that the year just closed may be properly termed the best, so far as business generally is concerned, that the automobile dealers of this city have ever enjoyed. In all lines the demand has been so great that many dealers were unable to obtain all the stock they wanted and a condition unprecedented in the annals of the local trade resulted in driving almost to a frenzy those dealers who had many choice orders on their books which they were utterly unable to fill. To summarize generally, it may be safely stated that the year has been one of unusual prosperity for the automobile dealers and to those engaged in every line that can be properly put under the category of the automobile and kindred trades.

During the year a number of new

garages and salesrooms were opened, while the established dealers in many instances made a number of notable improvements with a view to handling increased business. The trade at the present time is on a very substantial basis, for the incompetents have fallen by the wayside, and those who are now identified with the business are thoroughly familiar with the automobile game, and are in a position to handle the business as it should be handled. The fact that the year has witnessed a great increase in the number of women operators of gasoline and electric cars has been very pleasing to the trade. In former years women were not reckoned with in the sale of cars, but their influence is now being felt in no uncertain manner and this new field will be worked for all it is worth when the selling season

opens again in the American capital, which just now is automobile crazy.

The commercial end of the game received more attention at the hands of the local dealers than ever before. Washington is a fertile field for the exploitation of commercial cars and while it was worked in spots during the year, many fine opportunities were overlooked in the rush to meet the demand for pleasure cars. Many dealers are now laying their plans to get a firm hold on the commercial end during the coming year and it promises rich rewards to those who go after the business in the proper way.

As for the outlook in 1906 it is freely predicted on all sides that the business of this year will be as nothing as com-

pared to what will be accomplished in the new year. All hands are delighted that Washington's annual show will be held nearly 2 months earlier than ever before, the week of February 3-10 having been selected. This will start the selling season much earlier and enable dealers to get a line on business weeks in advance of former seasons.

Interviews which MOTOR AGE's representative has had with the local dealers indicate there will be but few changes in agencies in 1906. The cars represented here at the present time made good during the year and dealers are reluctant to give them up. Some pretty convincing arguments will be necessary to change their views.

## DETROIT PREPARING FOR BANNER YEAR

Detroit, Jan. 2—With increased floor space, improved conditions for handling their cars and a multitude of additional establishments, including several new agencies and factory branches, established during the winter, the Detroit automobile retail trade is preparing for what is universally expected to prove the banner year in local sales. Men who have grown to be good judges of such matters through experience, are responsible for the optimistic view. They base their prediction on numerous grounds.

In the first place, nearly all the local retailers have already booked quite a number of orders for 1906 cars. Inquiries for photographs of the new models are constantly coming in. There are more individual prospects than ever before, tabbed up ready for missionary work when the first shipments arrive. A considerable party from Detroit will be on hand at the New York shows, in order to make an early decision regarding their choice of cars. The day of the private garage is coming in Detroit and already the elite are planning to maintain their own establishments, adding to the one car which has formerly supplied all the needs, two or three more of different pattern for the peculiar uses to which each is adapted. The possibilities of winter motoring, fostered by the unusually favorable weather up to date, have occasioned an unusual demand for limousines and several agencies have kept their factories worried by the succession of orders which have come in for these fittings.

The pronounced feature of the winter, however, has been the crystallization of sentiment in favor of the commercial vehicle, and this is evidenced in the increasing popularity with the trade of a line which embodies not only delivery wagons of the lighter variety, but heavy trucks as well. There are now in progress in Detroit a number of carefully managed tests of motor vehicles in competition with the horse-drawn variety. In several cases the results have proven so conclusive during the holiday rush that large orders for next year's trade will certainly be the outcome.

Especially prominence was given this line of the trade during Christmas week, by the installation of several motor vehicles in the service of the Detroit post office. They were assigned to duty between the

main office and the sub-stations. Expert drivers were placed at the levers and an emergency understanding arrived at with the police, by which the scorching regulations were waived for the time. The result will give a handsome testimonial to the value of the automobile delivery wagon, when Postmaster Dickerson makes out his detailed report. Informal testimony which he has already given informed Detroiters that the use of the automobile was not only an actual financial saving, but also improved the service to the sub-stations fully 50 per cent.

## CHEERFUL IN SYRACUSE

Syracuse, N. Y., Jan. 2—Discounting the natural enthusiasm of those in the automobile business and judging from what has taken place during the past year, the retail business in central New York during the coming season will show an increase of 100 per cent over the one that has just past. One reason for this, of course, will be that several new dealers have gone into the business to add their persuasive eloquence to that of those already established. The second and most potent reason is that people are becoming

more and more alive to the pleasures and benefits of automobiling and are determined to own cars, cost what they may.

Probably one of the most significant indications of the trend of the business is the fact that the dealers have several orders for commercial vehicles, more in fact than the total number of commercial vehicles in use in Syracuse at the present time. And among those orders are two from one of the largest industrial concerns in the state for large trucks which will be put into active service. If they prove successful it is safe to assume that more will be bought by the same firm and many more by others who are watching the development of this kind of vehicle. A representative of one of the largest manufacturing houses who was here late in the fall soliciting orders for commercial vehicles was impressed with the fact that the merchants were only waiting for the time when it could be proven to them that a horseless vehicle would be cheaper to keep than horses. While several orders were taken many times as many more remain to be taken as soon as convincing arguments are used. What the local merchant seems to fear is that his repair bill will be so large as to wipe out other advantages and that his machine will not be in condition when he wants it most. It is up to the manufacturers to overcome these difficulties if they want the orders for their rigs.

The tendency during the past season of buyers of pleasure vehicles has been to purchase the larger touring cars and cases have been known where a man refused to buy a small machine which he could afford on the ground that he could not afford a large machine and he did not intend to trail behind. Of course this attitude has been the exception and the sale of both large and small machines has been large. It seems probable that the smaller vehicles will have a larger sale this year than last. One concern which conducts the largest garage in Syracuse, is reported to have done a business amounting to \$115,000 last year. It expects to double it next year.

## BISONS BUYING CARS IN QUANTITIES

Buffalo, Jan. 2—Nineteen hundred and six will be the banner year for automobiles in Buffalo. Not only are the ranks of the motorists growing fast, but the older drivers are buying a newer and better quality of cars. The coming year will see more new rigs in Buffalo than ever before. No less than a dozen stores and warerooms have located on Main street between Chippewa and the Buffalo Automobile Club's rooms. The ground floor of one entire building on Main street is now occupied by show rooms and tire stores.

The growing demand for heavier cars is better exemplified here by the advance orders of the George N. Pierce Co. and the E. R. Thomas Motor Co. The Thomas Flyers for 1905 were all sold long ago and the advance orders for 1906 already bid fair to run the new factory just finished to its limit. Orders for the Pierce Arrow for 1906 show the Pierce car is holding its clientele. Not only have many motorists now owning Arrow cars

ordered new ones, but many who have been driving lighter Pierce cars have swung into the ranks of the heavy owners. The Pierce Stanhope still retains its popularity for a light car. Dealers representing the other standard makes all report heavy orders for 1906.

The growth of motoring during the last year is perhaps well exemplified by the increase of the number of garages. Some of the larger dealers conduct garages, and there are several independent ones all thriving. The year has been a solid procession of progress. Not trade conditions alone have contributed to this, but the general prosperity has enabled many drivers to make heavier investments in higher priced cars. There is not half as much prejudice against motoring in this city at the close of 1905 as there was at the beginning.

The commercial era of the car is no longer an experiment. The Adams Express Co. was the first to go extensively into motors, and it does all its business



here with that type of delivery. The Larkin Soap Co. has several motor vans and other concerns are swinging into line. Dealers say the realm of the commercial car will be greatly enlarged the coming year if signs count for anything.

Dealers and manufacturers alike see nothing but prosperity ahead for 1906. With orders stacked high and prosperity at its top notch every dealer and manufacturer on the Niagara frontier is looking forward to the year of his greatest success in the business.

## LOOKS BRIGHT IN OMAHA

Omaha, Jan. 2—Reviewing the trade in this city and its tributary territory for the past year, every interest reports a betterment over the hard conditions of the preceding year. Automobile dealers are now beginning to overcome the prejudice against automobiles caused by the failure of the dealers to properly look after cars in the hands of their customers, exorbitant charges for repairs and general incompetency. During the past year there has been a rapid development of the automobile industry in the west which, if fostered, bids fair to increase to immense proportions within a few years. The Automobile Club of Omaha was formed and through this medium the dealers of the city have been brought together. They have become better acquainted with one another and the small and petty jealousies have been wiped out and much good has been accomplished because of co-operation rather than bitter rivalry.

Two factories have been put into operation in Omaha during the past year, the Union Pacific Railroad's motor car shops and the Karbach Automobile & Vehicle Co.'s plant. The former is building the Union Pacific's motor car for branch roads and the latter a line of commercial vehicles.

Prospects for next year's trade are bright indeed. Omaha and its tributary territory revels in the lap of luxury. Never before in the history of the great west has such immense crops been harvested—never before have the people of the west had so much money in bank and been so free from debt. Omaha's commercial interests are receiving the benefits and the automobile industry will reap its share.

## TOLEDO SOLD 300 CARS

Toledo, Jan. 2—Judging from the number of inquiries that have been made already by prospective buyers for 1906 automobiles, the coming season will be truly and surely one of the bumper variety. During 1905 there were in the neighborhood of 300 machines sold by the local automobile agencies. For 1906 it is conservatively estimated that there will be at least 600 automobiles sold. Last year there were as many cars of all kinds sold by the local agencies as had been sold during all the previous years from the time that Peter Gendron ventured out onto the streets of this city with the first automobile that came to town in 1898 up to the opening of last season's business. W. D. McNaull, of the east side, brought the first touring car to the city in 1902, and since then the sale of automobiles

have been increasing quite rapidly. Mr. McNaull said: "There is no use to talk unless you have something to talk about, real facts, you know; but it is my honest opinion that Toledo dealers will sell fully double the number of automobiles they sold last year." Said one branch manager: "We have already taken orders for twenty-six cars for the coming season, and have gotten deposits down. And inquiries! Holy smoke! We are buried with inquiries. I have never seen so many asking about new machines, and high-priced ones at that, at such an early time of the season. There will be more high-priced cars disposed of this season than ever before. Prospective buyers are getting right into the game for the best that can be had."

## FRISCO HAS GOOD TRADE

San Francisco, Jan. 2—Special telegram—Those engaged in the automobile business in Frisco have no cause to be discouraged. Nineteen hundred and five was most successful from the dealer's standpoint, and the outlook for the coming season is full of promise. There are more agents in the city than last year and many new cars will be sold in 1906. The machines now represented here are: Autocar, Buick, Columbia, Cadillac, Cameron, Haynes, Ford, Franklin, Knox, Locomobile, Moline, Olds, Peerless, Pierce, Pope, Packard, Queen, Reo, Rambler, Royal, Studebaker, Stevens, Thomas, White, Winton and Wayne. There are also the Heine, a four-cylinder car, and the Sunset, a small two-cylinder, both manufactured here.

Inability to get cars lost many sales the past season. The consensus of opinion among the dealers is that the new year will be the banner one in local motordom. The greatest demand the past season was for medium-sized touring cars and runabouts. The indications point to the same demand this year. Golden Gate avenue has become Frisco's automobile row. All the dealers are moving to this street and it will soon be a miniature rival to the rows of New York and Chicago.

## LOS ANGELES TRADE BIG

Los Angeles, Cal., Jan. 2—Special telegram—Estimates on the volume of business done in this city last year place the number of cars sold at over 800. It is also declared that over 200 1906 cars have been sold for future delivery, which leads to the prediction that the coming season will be twice as large as the one just ended.

This city now has over 2,000 machines, with nearly 1,000 more in Southern California territory. In the entire state there are 6,000 automobiles, with about 1,000 more west of the Rocky mountains and outside of California. Only eight foreign cars have been brought into the state in the last 2 years. In Los Angeles there are twenty-seven retailing concerns and one factory, which cover nearly all of Southern California. The volume of business done in the thirty-eight kinds of cars in Los Angeles is placed at \$1,655,000. In addition there are five exclusively tire houses and two motor supply concerns, which add \$164,000 to the total.

Statistics show the following sales during 1905: Reo, 186; Tourist—made by a local factory—130; Ramblers, 70; Autocars, 56; Whites, 47; Stevens-Duryea, 26; Franklin, 29; Elmore, 27; all electrics, 47. Of the big cars the White leads. The Pope-Toledo sold 16 and the Peerless 15.

## OUTLOOK IN CREAM CITY

Milwaukee, Jan. 2—Milwaukee has at last found herself—that is speaking from the viewpoint of the automobile. Throughout the past year the demand for more cars and bigger cars, and more expensive cars, has been continual. The supply unfortunately has not always been as immediate as the salesmen wished for. Early in the season—that following the close of the show circuit—deliveries were impossible; later they were sparingly dished out; as the summer wore on they grew more prompt and into the late fall a few impatient buyers waited for the spring bargained machine.

One local dealer estimates the number of cars at 350, the majority of which are runabouts, of the Cadillac or Reo class, whereas high-powered machines, those with a rating of 24 to 55 horsepower, are few but very much in demand.

The Orlando F. Weber Co., distributor of the Pope line, estimates the number of cars of all classes now in use in the city at 500, and places the majority of these in the runabout class. Upward of two score Pope 24-30-horsepower machines were delivered and other high-powered makes were introduced by their respective salesmen.

During the year a considerable boom has been experienced because of the several new agencies opened, among which can be noted the McDuffee agencies handling the Stoddard-Dayton cars, the Pardee-Ullman with the White, Packard and Baker electrics, the Githens Bros. with the Oldsmobile and another house, the Welch-Estberg Co. from Waukesha.

Not to be forgotten is the impetus given to commercial automobilizing interests in and around the city by the Four Wheel Drive Wagon Co., which has for 1½ years conducted tests with its big machines, placed in the employ of several of the big breweries. These trucks have shown marvelous pulling power under varying circumstances. Arrangements are completed so that the coming season will see them manufactured in considerable numbers and installed in the employ of many Milwaukee concerns.

## DAYTON IS DELIGHTED

Dayton, O., Jan. 2—Although this city has but five dealers, there is every indication that a prosperous season is ahead of them. The demand is good and orders for future delivery are such that the retailers are optimistic. The Miami Motor Car Co. will handle the Oldsmobile, Franklin, Locomobile and Haynes. Bordenwisch & Glancy, with fresh capital, will carry the Queen. After the Chicago show another car will be added. The Earl Kiser Auto Co. has the Winton and Autocar and the Peckham Carriage Co. the White, Peerless, Cadillac, Packard and Buick.



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## 1905—THE TRADE IN AUTOMOBILES—1906

THE passing of the year 1905 has by no means seen the passing of the horse, but it has witnessed a wonderful growth in the automobile trade and of course in the use of the automobile. It is not at all likely the horse will ever pass out of existence or that its days of usefulness will ever be ended, but it will have served its days of usefulness in distinct lines and, as its work was taken up by the railroad locomotive and the trolley, so will the motor car relieve it of some of its burdens. The great development of the automobile and its general recognition of utility by the people is so rapid that this must naturally be the outcome, the motorphobists to the contrary notwithstanding.

It is almost impossible to arrive at even a decent guess as to what the amount of business in automobiles and accessories was in 1905. It was immensely large and at least double that of the preceding year. The industry has grown by leaps and bounds, and all signs point to another doubling process for the year which has just been begun.

The automobile has been found out. It has proved its value to the tourist, the pleasure and health seeker, and, what is far more important, to the commercial world. It is in many places and in many lines doing the work that could not be done by horses and its field of operation has so far been limited owing only to its newness.

The average man has not sought to inquire into the magnitude of the automobile business; it is so comparatively new that its remarkable progress has gone on without the world at large being much the wiser, but from this time on its development will be watched by the public, the financier, the merchant and the common carriers all over the world.

This already immense and still growing industry has been the means of opening up manufacturing plants, of giving employment to thousands of skilled mechanics, of bringing out inventive geniuses, of producing something that will aid in the swift rush of man in this date and age.

The automobile has been kicked and cuffed and cussed, but all the kicking and cuffing and cussing have only brought before the people its good and its bad qualities, the former to be retained and the latter to be obliterated as suggested

by the criticisms that have been made upon it up to the present time.

Even the most rabid of the motorphobia press has warmed up a little and has begun to see that the motor car is something else than the rich man's plaything, something other than a red devil and a life destroying affair, something practical, something of benefit to the community and something which will produce other benefits.

The trade in automobiles during the year 1905 was so great that the general commercial world has been compelled to look and listen, and this big trade extends from one hemisphere to the other and into all countries of the globe.

That big trade is to be repeated during the year upon which we have just entered—and repeated twice over. The demand for 1906 cars has already been so great that more than one manufacturer has seen his output sold, and sold long ago. This does not indicate that every output will be sold, but the better grade of cars will find ready purchasers, and the new candidates for honors will be going through the experimental mill with a view of aiding in supplying the still further demand which must develop in 1907.

To the average mind there does not

seem to be any material change in many of the cars of 1906 over those of 1905, except in matters of finish, but as a matter of fact there has been a great deal of alteration. All through the practical eye can detect vast improvement not only in design but in accessibility, in quality of material used, in workmanship. In a few words, the 1906 car is vastly superior to its predecessor, and as these improvements in quality and reliability become known to the general public those who have waited for the era of perfection to arrive will have a chance one by one to break away and climb into the bandwagon.

The demand for automobiles from the country made immense leaps during the last quarter of the old year, and another year will probably see heavy additions to the ranks of automobilists from the rural districts, for the farmer has long been interested in the motor car and his great prosperity for the past several years has put him in a position to equip himself with the more modern means of transportation to and from the farm.

While picturing the situation from the apparent optimistic side it is well to note that while there is a big demand for new and higher powered cars, it must be remembered there are thousands of second-hand cars on the market and that an outlet must be found for these.

There can be little doubt that the good cars—those that have been tried and those whose makers have earnestly endeavored to give value for the money received—will have no trouble in finding a ready market; the others will have to go through the process of improvement and refining before they can hope to become factors in the field.

It is clear to the student that if the output of pleasure cars is increased by 50 per cent—a conservative estimate, surely—then it is safe to say the number of cars to be sold for commercial uses will be quadrupled. This end of the business has hardly had a beginning, but indications are that at no distant future it will take the lead and hold it.

## ENGLAND AND FRANCE LOCK HORNS

FRANCE and England have locked horns; they have begun a fight for European supremacy in the automobile trade. England had been taunted over her slowness until the gibes thrown at her and the self-satisfied French smiles roused her ire and she resolved to get into action. She stole a march on France by dating her big Olympia motor car exhibition as early as November, a month ahead of the Paris salon de l'automobile, and by persistent hustling and decisive action gave the world the first peep at the best foreign cars that had been brought out for the world's market for the next season.

England sold a vast number of automobiles at this show; the purchasers took English goods because they saw possibilities of early delivery, because English design ranked high, and, perhaps, because they were convinced the English makers had made greater advancement in motor car construction than the pioneers across the channel. France gave the world a mag-

nificent spectacle, she produces automobiles almost beyond criticism; but in 1905 she did not make the advancement, according to competent critics, that England did.

The French makers have no fear for their immediate business, but their future is menaced by the English makers and the former have, in consequence, practically demanded that the next Paris show antedate the English affair at Olympia. But the English makers do not propose to be caught napping. They are determined to exhibit their 1907 cars before the French show their wares to the world. The French makers must exhibit early in November and there is no certainty this will be before the English show.

This keen competition means something. It means progress all along the line, for early exhibitions alone will not sell cars. The contest that is going on abroad should give a hint to American makers, who seem satisfied to put off exhibiting new cars until after the buying season has opened.





Is the water-cooled car any relation to the water wagon about this time of the year?

\*\*\*

It is almost time to begin hearing reports of the sale of all the outputs of all the French factories—it's quite the thing, now, you know.

\*\*\*

Hemery was foolish to jump in and break the kilometer record at this time, for he will have a harder job to crack his own figures at Ormond than he would otherwise have had.

\*\*\*

Cleveland, O., Jan. 1—Special telegram—For the sixth time Barney Oldfield has resolved to quit track racing and says he is not like the fellow who gets on the water wagon New Year's day.

\*\*\*

Looking over the Ormond entry lists one is impressed with the fact that there will be one or two well pleased and a whole lot of disappointed contestants when the program has been finished.

\*\*\*

With the Selden patent, the Renault patent and a few more patents to be heard from, buttin' into the game and demanding royalties, where goes the hope of the fellow who has been waiting for prices to drop?

\*\*\*

The Winton chassis, which was carried on the company's transcontinental exhibition train, was on view at a San Francisco garage. A number of people surrounded the exhibit. A salesman picked out the most likely-looking spectator and showed him over the machine—valves, carbureter, transmission, rear axle, gasoline supply system and all in the minor

## The Week

Legal fight over tags in Philadelphia results in order restraining municipal authorities from issuing automobile licenses until Supreme court hears arguments.

French show comes to an end; makers take next year's exhibition out of hands of automobile club and will hold it in October in Galerie des Machines.

H. H. Franklin's proposed racing classification by cylinder volume instead of by weight before A. C. A.'s technical committee.

Renault Brothers announce they control European patents covering direct drive transmission and want \$40 royalty on each car.

Long Island Automobile Club asks geological survey to mark on charts which are dirt roads and which are made of stone.

Percy Megargel arrives at Winslow, Ariz., after a thrilling experience in the snow coming from Flagstaff.

Elmore Mfg. Co. claims it has secured American rights to a three-port two-cycle gasoline engine.

MOTOR AGE correspondents in leading cities report on last year's business and prospects for 1906.

Auguste Hemery, in a Darracq, smashes world's kilometer record, doing 203.5 seconds.

Lancia sails from Havre for America.



details. The prospect developed well, he was without doubt interested, and the salesman began to look up. As the interested man passed out of the door he thanked the salesman for his information and then: "It certainly is wonderful the progress which has been made in electricity." As Colonel Pope once said, such is fame.

Because a man makes an air-cooled motor, it is no sign he is a hot air artist.

\*\*\*

Nobody has accused Percy Megargel of being a poor correspondent—or a poor press agent, for that matter.

\*\*\*

New York, Jan. 1—Special telegram—Senator Morgan has turned over a new leaf and has resolved not to find another new beach for at least 30 days.

\*\*\*

John Farson, one of the "front runners" in local automobile affairs, sees a future for the Chicago Automobile Club as a leading social club of the city.—News item. And this will finish it.

\*\*\*

Philadelphia, Jan. 1—Special telegram—There has been a great deal of resolving on the part of the Quaker motorists. Most of them have resolved to carry one license tag and take chances.

\*\*\*

Washington, D. C., Jan. 1—Special telegram—Among President Roosevelt's new year resolutions was one that he would not again go out scorching in an automobile—or at least would not be caught.

\*\*\*

Press reports indicate that the New York show promoters, taking the hint from the Paris salon, will do a little stunt in the display line themselves; but they'll have to go some to equal French splendor.

\*\*\*

Cablegrams tell of the high old time that was had at the close of the Paris automobile show. Maybe New York and Broadway will now have something upon which to base a good time at the close of the New York show.

## DAILY PRESS GRADUALLY BECOMING RECONCILED

It is becoming a well settled fact that automobiles are soon to be looked upon with almost universal favor rather than as they are now with some classes of people. The eastern press seems more liberal toward the automobile than the western papers. Recently a dispute arose between the turnpike authorities about Hagerstown, Md., and the automobilists, and, to the surprise of many, the local papers took up the fight on behalf of the automobilists. One paper went into the matter to this extent: "Owners of power-propelled road machines will insist on having certain rights and privileges along with the owners of other sorts of vehicles on the public highway. It is undoubted that automobiles are here to stay. They will increase in number each year and will become more numerous on the roads. They

represent an advance in science just as the self-binder, the locomotive and other labor-saving machinery. They must have their place, their rights, and their limitations. To attempt to legislate them off the face of the earth is idle and of course foolish. To pass laws making their use impossible or restricting their use to such narrow limits that the benefits of their capabilities cannot be realized is not in the line with progress or consistent with sound reason. As far as Hagerstown is concerned the growth and development of the automobile industry is of prime importance. We here are directly benefited by the expansion of the industry, but there is a question beyond that to consider. The automobilists have certain rights which should be respected. It is unfortunate that the horses and their

drivers on the highways find the machines unpleasant and sometimes terrifying. But it was the same way with locomotives, with trolley cars, with bicycles and with traction engines. Who will arise to say any of these shall be suppressed or their speed shall be reduced to a snail's pace? While the automobile drivers want to have a free swing they must use reasonable care and caution with a due regard to others' feelings, rights and possible dangers. The persons driving horses can best protect themselves by making a point of accustoming their horses to automobiles and the machine owners can aid by giving fractious horses a fair chance. But as for surrounding automobiles with narrow restrictive laws it is out of the question, and a fair consideration should be displayed in any automobile legislation.

## DEMAND DIRECT DRIVE ROYALTY

### Renault Brothers Claim to Hold Patents Controlling Propeller Shaft Transmission and Propose to Collect \$40 a Car from Makers Using This Device—Some Call It a Bluff

London, Dec. 23—Latest devices from Paris go to show that the English are threatened with an experience similar to that which the American trade has had to undergo with regard to the Selden patent. Renault Brothers, the Parisian firm of motor car manufacturers, whose success has always lain in the comparatively small-powered motor car, were the first to incorporate, as is now universally known, the direct drive in connection with the cardan shaft, or propeller shaft, transmission. They now claim to have a patent for that device, and consequently propose to place all the makers of cars using a direct drive from engine to road wheel through gearing, under contribution to the extent of \$40 per car for license to use the device.

They found this claim on the success they have secured in a minor French court in an action for infringement of their patent, but as the matter is one vitally affecting not merely the French trade, but all trade done in Europe—since direct drives are now practically universal—the French motor car manufacturers are considering the question of fighting the appeal in the highest courts, while the British Society of Motor Manufacturers is already on the move with regard to fighting any action which may be instituted against one of its members in this country, as is threatened.

In some quarters, the whole affair is regarded as a piece of bluff, but others are not disposed to regard it in such a light fashion. The Renault patent, under which the pother has arisen, is dated February 9, 1899, in France, and February 22, 1899, in England. It is for "improvements in driving and speed change mechanism for motor vehicles" and in the preliminary

statement of claim for the gear, "is characterized by the special feature that the movement is transmitted from the motor to the wheels directly by means of gear wheels, without the intermediary of change or belts." The accompanying drawings undoubtedly show the direct drive as now generally understood, and as will be seen from the sketches of the Renault transmission published then and subsequently.

There the matter rests at the moment as far as the French trade is concerned, but those who have gone into the matter on this side declare there is an English patent which clearly forestalls the Renault in the matter of the direct drive. It was taken out by George Elie Whitney, of East Boston, Mass., U. S. A., who is well known on your side as a motor designer. The patent essentially deals with the steam motor, but he naturally claims its application to any car propelled by mechanical motor power. The difference between the Whitney and the Renault patents is that the Whitney does not include a change speed gear, a natural consequence of the adoption of steam for motive power, but it is held that if there is any patent rights in this claim, it is possessed by Whitney, inasmuch as the application of any other motor power than steam would include a change speed gear system such as obtains on the gasoline motor.

Despite all that the French trade has done and all that the French motor press has written, the effect of Olympia upon the Paris show has been so distinct and so inimical that, in self-defense, the Chambre Syndicate de l'Automobile has decided to break loose from the Automobile Club of France and hold a show of its own, which it has proposed to fix for some date about

mid-October, 1906. The Automobile Club of France has not accepted the situation with resignation, but has renewed its agreement for the Grand Palais in the Champs Elysees, possibly with the idea of forcing a coalition before the separation becomes definite and final. In the meantime, however, the French manufacturers have decided to hold their exhibition in the Galerie des Machines in the Champs de Mars, a huge building which was used for the machinery section of the last Paris industrial exhibition. There is no doubt that October will be found to be a trifle too early to admit of the French motor trade having its 1907 models ready for exhibition at this place. The leading manufacturers will be busy with their various racing, touring and other competitions right up to the end of September, and anybody who knows how the work of a factory is controlled by the exigencies of these affairs will find it difficult to believe that the new designs for 1907 will proceed collaterally with the exhibition of affairs which demand the latest and most improved designs for success. At least this is the opinion here. The news has moved the English trade, but whether it will result in any alteration in the Olympia date or not is difficult to say at the moment. Indeed, the whole situation is one which suggests reticence, as it may cause a great shuffling of the cards before next fall.

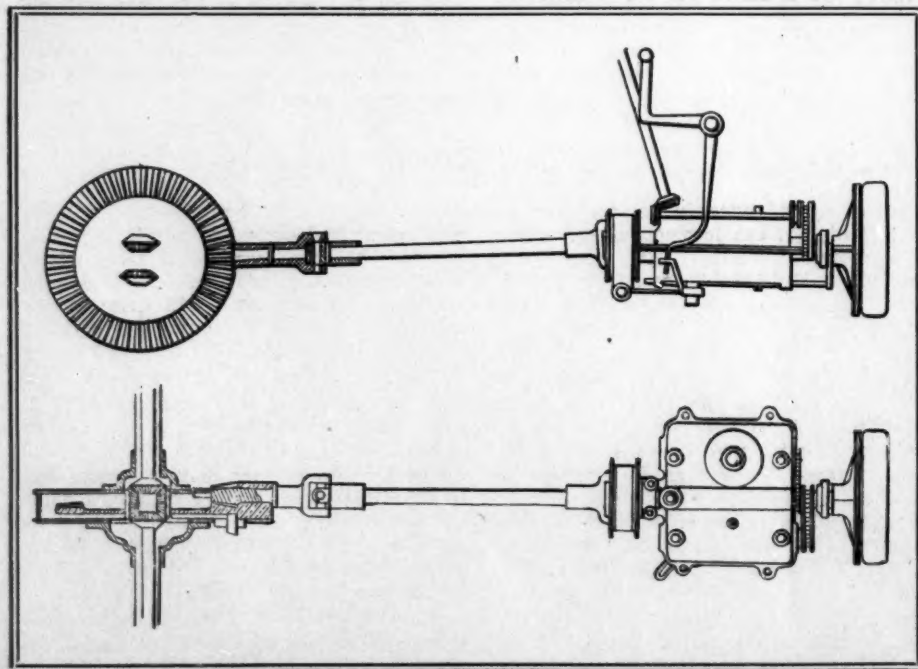
#### PLANNING FINE ROAD

Muskegon, Mich., Jan. 2—One of the greatest road-building projects in the history of good roads making in Michigan is planned by Dr. C. J. Dove, president of the Muskegon Automobile Club. The project is no less than the construction of a gravel automobile road between this city and Grand Rapids, a distance of about 35 miles.

Dr. Dove will call a meeting of the Muskegon Automobile Club and the Grand Rapids club for Grand Rapids about January 15. At this meeting, to which an invitation will also be extended to highway commissioners and pathmasters along the right of way, the state reward good roads law will be discussed in all its phases by competent speakers, including State Highway Commissioner Horatio S. Earle.

The road between the two cities is now laid out but is in such poor condition that it is of little use. With the exception of about 13 miles it will have to be entirely rebuilt. Grades will have to be made and cuts dug in many places. Dr. Dove will try to interest prominent automobilists all over the state in the proposed work and will also enlist the aid of the state, which builds a mile of road free for every mile built by citizens, townships or counties. The townships along the route are expected to help in the work and with their aid it is expected that only a small number of contributions will be needed. The gravel will be taken to the right of way this winter on sleighs and left there until spring. A steam roller will be used in laying the gravel, and when the road is completed it will be one of the finest in the state, it is expected.

Both clubs, as well as prominent citizens of both cities, have been trying for years to get the work done, but nothing



RENAULT BROTHERS' DRIVE SHAFT AND DIFFERENTIAL PATENTED IN 1899



has ever been accomplished. The enthusiasm at present is greater than ever before and it is almost a certainty that the project will be carried through. A large number of automobile owners and good roads enthusiasts from all over the state are expected to be present and the meeting will probably be closed with a banquet.

In connection with the good roads enthusiasm comes word from the state highway department at Lansing that there is at present \$20,000 in the state highway fund which has not been applied for. To date there has been \$11,500 paid out in state rewards for roads built. The movement is gathering favor rapidly and it is expected that an additional appropriation may be made by the legislature at the next session. The outlook for good roads at present is very encouraging throughout the entire state of Michigan.

#### SEEK OFFICIAL SPEEDOMETER

London, Dec. 26—In connection with the proposed British automobile club's tire test, lamp and speedometer trials are also projected, 25 per cent of the fees payable by the entrants in the latter competitions being devoted to recouping the tire entrants for their expenses. The lamp tests are divided into two classes, with special sections, gas lamps and oil lamps, and as far as the conditions go are very thorough and if accepted by the trade cannot fail to have an important influence on the development of the motor lamp. The speedometer test has probably been suggested by the undoubted inclination of the legislature to insist on some self-registering, self-recording type of speedometer on automobiles. Such a device would have been compulsory had the board of trade been able to put its hands on one which could be relied upon, and the automobile club in anticipating any action in this way has certainly done a wise thing. There are half a dozen very promising devices on the market, but none has official standing and their evidence when brought to bear on cases of furious or illegal driving is variously regarded according to the personal inclination of the judge or the magistrate; but if out of this competition a really reliable meter emerges, there is no doubt there will be a lot of money in it for the manufacturer and a considerable safeguard for the motor car user in the way of protection from constables and their speed traps.

#### WILDCAT ROAD SCHEME

London, Dec. 25—The private bill office, which is a parliamentary sub-sectional department, has just issued the London and Brighton motor way bill, intended to authorize the construction of a motor track between London and Brighton, and is to be promoted in the next session of parliament. Five years are stipulated for the completion of the scheme, the capital arranged for is put down at \$12,500,000, to be issued in \$50 shares with power to borrow on mortgage \$3,750,000. It is evident that there are some cranks and faddists who believe that money can be had easily from British capitalists, but it is safe to say little will be got from the motorist for this wildcat scheme.

## WAY ROADS ARE KEPT

### Ontario's 60,000 Miles of Highway Maintained By the Township and County Councils

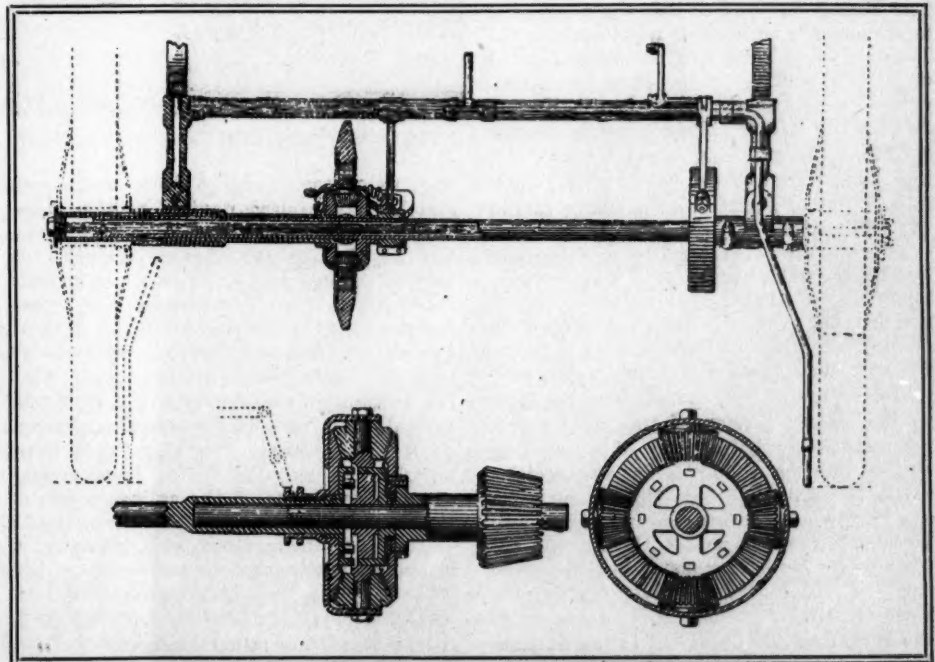
Washington, D. C., Jan. 2—The all absorbing topic of the day in automobile circles is good roads, and anything pertaining to that subject cannot fail to interest automobilists. This being the case, some details of how the province of Ontario takes care of its 60,000 miles of roads will no doubt be read with interest by automobilists on this side of the border. The country roads in Ontario are maintained by township and county councils, and since the inauguration movement for better roads there is a radical improvement in the condition of the roads. The old way of road improvement by statute labor, which has existed for nearly a century, and did much during pioneer days to open highways, has been largely superseded by a more modern system of a direct tax rate and closer supervision. Township control is universal in road construction, while, at the same time, county councils have undertaken the management of a system of main roads within the county. The work of the county council is devoted chiefly to legislative functions, and the actual oversight of work on the ground is left to road foremen or overseers. The county system is aided by the provincial government to the extent of one-third of the entire cost of construction. During the years 1903-4 about 1,624 miles of main roads were improved, at an expenditure of half a million of dollars, through provincial aid. Modern road machinery is in general use throughout the province. Natural gravel beds are numerous, and care is taken to select the best gravel in the pit, which, under the modern system, is placed on the roads after the earth is consolidated with the roller. Bridges are now being built with steel superstructures, concrete abutments and concrete floors.

The matter of drainage is given the

greatest attention. Where under-drainage is needed tile are used with frequent outlets that will lead to natural water courses. Breakers, once so common for carrying the water from one side of the road to the other, are entirely abandoned. Concrete culverts have taken their place, and on the steep hills, where such surface drainage is necessary, the road bed with its high center crown, is as smooth as on the level. In the older parts of Ontario road construction has long since passed the early temporary stage, and all improvements are made with a view of durability. Perth county has 1,302 miles of country highways; of this 672 miles are graveled, and are as fine permanent roads as can be found in any country.

#### CARRIAGE MEN GUESSING

San Francisco, Dec. 28—A new automobile owner in San Francisco dropped into a prominent carriage concern to dispose of a new brougham, a vehicle which cost a lot of money and which he was willing to sell cheap. The poor carriage dealer's hands went up in the air. "Stand in this window and watch that street—Golden Gate avenue, the automobile row of 'Frisco—for half an hour; then tell me how much I can allow you for your rig." First came an automobile, then a scavenger wagon. Then another automobile, then a business buggy, then a peanut rig, another automobile and another scavenger wagon. The new motorist commenced to see the point and the carriage dealer continued: "These automobiles are certainly doing the business for the high class trade. Five years ago a brougham would pass this window every minute of the day; now such things are becoming curiosities. Then, too, the hotel people have taken hold of the automobile. Hotels which would not consider the buying of a horse-drawn bus readily pay good money for a motor vehicle. Just where the automobile will head us next I don't know, but we carriage dealers will, eventually, have to take up some branch of the automobile business in order to obtain a livelihood."



WHITNEY'S DIFFERENTIAL AND DRIVE SHAFT PATENTED IN 1896

## PARIS SHOW AT AN END

### Salon Winds Up With Banquet at Which M. Rives Is Decorated for His Work

Paris, Dec. 25—The eighth annual Salon de l'Automobile et du Cycle, or, translated, the Paris show, is now a matter of history—a gorgeous page, too. The end came last night after 16 days of playing to crowded houses, as the actor folk would put it. While the Grand palais was packed to the doors with a record-breaking crowd in point of numbers, everyone anxious to see the most brilliant display of automobiles and accessories ever gotten together under one roof, the trade and the real people—those on the inside—were assisting in lowering the curtain—first at a gala soiree at the opera given by the Automobile Club of France, and then at a banquet at the Hotel Continental. There was a swell mob at the opera, but the banquet was reserved for the big bugs of motoring, M. Trouillot, minister of commerce and industry, presiding.

Baron de Zuylen and Marquis de Dion were among the speechmakers and all kinds of flowery compliments were showered right and left. Decorations, too, were showered around and naturally one found a fitting resting place on the lapel of the dress suit that adorned M. G. Rives, conductor of the show. They made it a good one while they were about it, the minister of agriculture himself awarding M. Rives the order of Commander of the Merite Agricole.

Before the show came to an end it was announced that the next exhibition would be held early in October before the Olympia show in England. While the antagonism toward the British effort did not crop out officially there is plainly an undercurrent of feeling, it being the belief here that the Britons sort of stole a march on their rivals and that to a certain extent the Olympia took the wind out of the sails of the exhibition that just closed its doors. The French are not to be caught napping again and the next affair will antedate the English one. This was officially decided on at the meeting of the Chambre Syndicate de l'Automobile, otherwise the French Society of Motor Manufacturers, which surprised the motoring world by also taking the show out of the hands of the Automobile Club of France and deciding to run the affair itself.

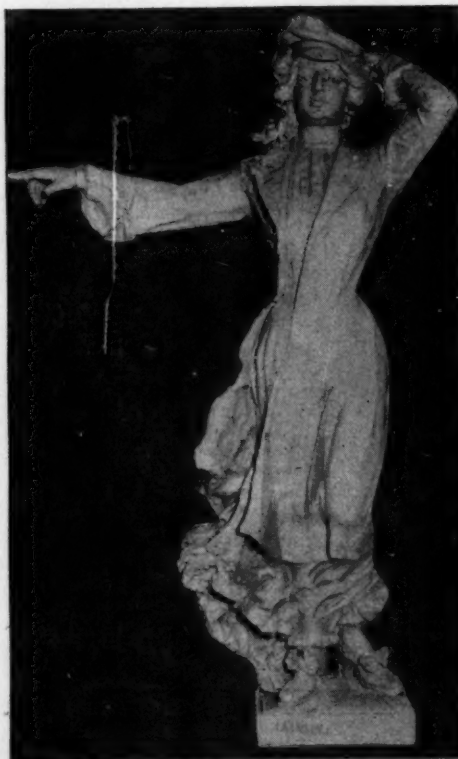
This step will necessitate a change of buildings at the next show. The Automobile Club of France has the Grand palais cinched, but even if it hadn't it is doubtful if the makers would have wanted it again, for this time there was considerable complaint of insufficient space. The positions in the central portion of the ground floor are settled by ballot and of course the choice bits go to those in the society, while those outside have to scramble for the crumbs. Therefore, the next show will be held in the Galerie des Machines in the Champs de Mars, a monster building used for the machinery exhibit during the world's fair. Although it is run down at the heels now and hardly fit for an automobile show, it can be put into shape by the

expenditure of a pot of money, of which the society seems to have a plenty.

One can judge of this by listening to the tale that is told of the cost of lighting the salon roof during the last show. To do this required no less than 140,000 incandescent lights which illuminated the roof and outside of the building. Besides these, there was a string of mercurial arc lights on the front of the building. All this ate up the francs at a rate that astonished even the money-spending Parisians, so it is easy to believe the statement that the cost of the general illumination was \$1,500 an hour or \$25 a minute. Even a Rothschild would flinch a bit paying for this, so the lights were not turned on each night until after the stands had been illuminated.

#### SELF-STARTING DEVICE AWARD

Paris, Dec. 25—Sometime since the Automobile Club of France instituted a test for self-starting devices which were intended to supersede the present necessary but undignified crank-turning labor. Prob-



"THE AUTOMOBILE GIRL" STATUE FOR SHOW

ably in consequence the firms of Renault and Mors exhibited devices of this character on their stands at the Paris show, but as the Renault device arrived too late in the competition it was not adjudicated upon. The Mors device, the Dynamogene, however, was, and in the judges' award it is ticketed first. It simply consists of a supplementary fuel supply with the necessary arrangement for pumping it into all four cylinders when it is desired to start the car. The current is then switched on and the timing lever swung so as to catch one of the cylinders at the timing point, when the car, of course, will start. The Cinogene device of N. Isnard's is one in which carbolic acid gas is the motive power, held in compression and when turned on operates the starting gear. All these devices must be operated from the driver's seat.

## TOUGH DRIVE IN SNOW

### Megargel and Fassett Have Most Thrilling Ride of Their Careers Going to Winslow

Winslow, Ariz., Dec. 27—Badly battered but still running, the Reo Mountaineer of New York pulled into this town at 3:30 o'clock yesterday afternoon, unloaded at the Harvey house and sought the friendly shelter of a blacksmith shop, for the trip from Flagstaff to Winslow proved a most difficult one and both car and crew showed very plainly that their Christmas on the snow-covered plains and canyons had been exciting if not merry.

In addition to Fassett and myself, the car carried a cowboy, Don Chisholm by name, who acted as our guide across the country from Flagstaff, showing us how we could cross Canyon Diablo and Padre canyon without resorting to the railroad bridges, having been warned by the railroad company officials not to cross on their tracks under any conditions.

Leaving Flagstaff with the mercury hovering around zero, ploughing our way through snow, in some places drifted to a depth of several feet, sleeping out on the open prairie with the cold wind driving the mercury far below the zero mark after sundown, going without dinner on Christmas and having to thaw out our supply of canned goods at every meal cooked en route mark a week of as strenuous automobiling as I ever hope to negotiate—even Chisholm, our guide, saying that the boys in his cow camp know enough to stay indoors such weather even if they do lose an occasional head of cattle through it.

Without question the roads traversed the past week have been the roughest it has ever been my lot to experience and the passage across Padre canyon and Canyon Diablo almost defies description. It took all of Christmas morning, with our cable and windlass, to hoist the Reo Mountaineer out of the former canyon, even after we had unloaded the car and carried all of our supplies to the top. The grade was as near 100 per cent as the sloping wall of a house could make it, for the rocky edge of this canyon is almost perpendicular.

Our truss rod on the front axle was carried away early on the trip from Flagstaff, our steering gear bent where it came in contact with a snow-covered piece of lava rock, one front spring broken where the car ploughed its way down the rocky steps leading to the bottom of Canyon Padre and the other markings received in the roll down Cajon pass embankment gave the Reo Mountaineer a pretty hard look when it sailed into Winslow. Twenty-four hours in a blacksmith shop, however, will take out all the kinks and when we leave here the little globe trotter will be as speedy and easily handled as if she hadn't already run some 6,000 miles through thirteen states and territories during the past 4 months.

Christmas morning I froze my nose and Fassett froze one of his ears. Our guide was so nearly frozen all the way across from Flagstaff that he certainly would



have dug out for home had an opportunity presented itself, but there was neither house nor human beings encountered on all that 55-mile stretch of snow-covered prairie, with the exception of two railroad section shanties, both of which we stopped at.

All hopes of getting to New York in time for the automobile show have now vanished, for it is slow speed work through the deep snow almost all the time. No wagons attempt to roam over the snow-covered plains and the trail—faint at the best—is not entirely obliterated, necessitating our employing a guide if we lose sight of the railroad tracks. There are no houses and the towns are 50 to 100 miles apart so one has to camp out nights along the trail and carry food and gasoline enough to take him to the next village.

It is surprising the amount of gasoline that is consumed. We used the greater part of 15 gallons to bring us the last 55 miles. Of course a large part of this was utilized in thawing out our pipes every morning and in running the engine after we had let the water run out at night, for this zero weather freezes anything in the water line within a few seconds. Filling up the tanks with water in the morning is a long and tedious task for we have to either melt snow or ice. Everything in the line of ponds, streams and lakes is frozen solid and even the can of extra water we carried on our running board insisted on freezing solid every few hours.

At Flagstaff I loaded the tonneau with canned provisions. That night when I went to get supper everything was frozen stiff. It was 9 o'clock before we had a fire burning that would heat water sufficiently to thaw out our baked beans, canned salmon and condensed milk. We served ox tail soup frozen in chunks and we didn't have any salt. I thought all canned goods came salted but they don't. We packed the cracker box next to the gasoline can and the latter leaked a little—not much, but just enough to saturate the crackers with the taste of gasoline. I have long been accustomed to the odor of gasoline and have gotten so I enjoy it, but the taste—well, that's different, but it was all we had and we had to eat.

There may be some consolation in knowing that this is the coldest winter this section of Arizona has ever experienced, yet that doesn't help much toward thawing out a frozen nose with handsfull of snow, especially when that hand is so cold there is danger of its freezing too, but it is pretty early to complain for every one says: "Cheer up, the worst is yet to come."—PERCY F. MEGARGEL.

### HEMERY BREAKS RECORD

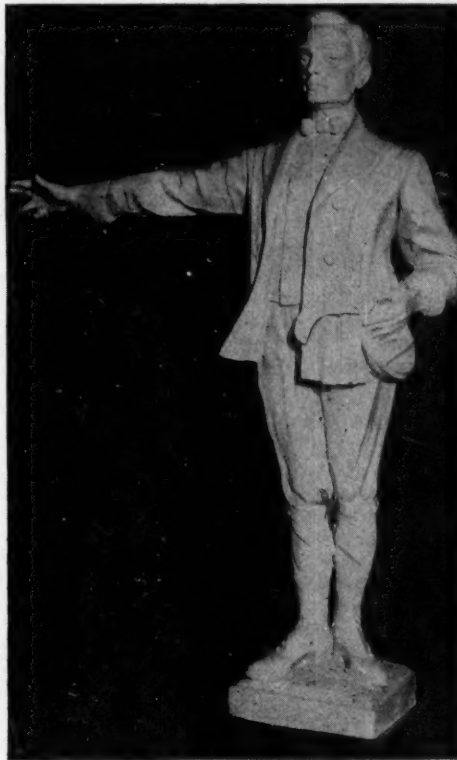
New York, Jan. 1—Cable advices from Paris state that Hemery, in his new eight-cylinder 200-horsepower Darracq which he will drive at the Ormond meet, broke the world's kilometer record held jointly by Baras, of France, and Earp, of England, at 21 $\frac{1}{2}$  seconds. Hemery did the  $\frac{1}{4}$ -mile in 20 $\frac{1}{2}$  seconds, an average of a mile in 33 seconds, slower than the mile in 32 $\frac{1}{2}$  seconds made by Bowden over the Florida sands last winter, but faster than the official mile credited to Macdonald.

## STAFF WORK IN GARDEN

### A. L. A. M. People Preparing Something Startling in Way of Decorations for Show

New York, Jan. 2—After many months' work the decorations for the show which opens at Madison Square garden January 13 have been completed and it now only remains to install the figures, staff work and paintings in the big amphitheater. No one who has not seen the progress of the work can appreciate the marvelous transformation that the garden will undergo before the doors are flung open on the opening night.

In order to still further enhance the spectacular features of the show the committee at its last meeting decided to reproduce the figure of the girl which is being used in the poster. This will be made of white staff, just the same as the



"THE CHAUFFEUR" STATUE FOR THE SHOW

other work, and is to be evolved out of a shell, and will support a monogram of the association. From the top will extend rows of small electric lamps, giving the effects of strings of pearls. Another addition to the original plans for decoration will be the reproduction in more than life size of "The Automobile Girl" and "The Chauffeur." The figures will be done in staff work. They will be located on a raised platform and will indicate the route into the concert hall. These three figures are works of art.

Arrangements have been made for the decorators to take possession of the garden 1 week before the show opens, and during those 7 days the army of workmen will transform the big place into a veritable fairyland that will divide honors with the glittering productions from the world's greatest automobile factories.

Not a pillar or a post, nor anything now present in the garden, will be visible when the decorators complete their work, for even the roof of the amphitheater will have a canopy of blue, with stars that will make it look like the celestial cover. The balconies, the exhibition hall, and every other place in the garden where machines are shown, will receive the same attention as the main floor.

### TWO-CYCLE SENSATION

Toledo, O., Jan. 2—Announcement has been made by the Elmore Mfg. Co., of Clyde, O., that it has secured the American rights to a three-port two-cycle gasoline engine under patent 544,210 issued by Joseph Day of Rumford, England, by the United States patent office August 6, 1895, and that other automobile makers using this device will have to pay for the privilege. The Elmore people claim they have been using this type of two-cycle engine for 6 years, all this time believing they had a perfect right to do so. Other makers, too, imagined there was nothing in the patent line to prohibit its use and some of them declared their intention of using the two-cycle motor on this year's models. About a month ago, however, Mr. Day called at the Elmore plant and claimed to be the owner of a United States patent covering this type of engine. Investigation of his claims, the Beckers say, satisfied them that he was right in his contention, so they at once proceeded to make terms with the Englishman, with the result that they not only took out a license but secured the American control. The patent still has a year to run. It is claimed that it is a basic patent and that neither in this country nor in England is there anything that antedates the Day claims. However, it does not control all types of two-cycle engines—only a two-cycle where the inlet port is controlled by the action of the piston. It is asserted that so sure are the Beckers that they now control the Day patent as applied to the automobile that any maker using this style of engine without their consent and without a license will have an injunction served on him by the Elmore makers.

### A. C. A. SHOW PLANS

New York, Jan. 2—The exhibitors in the show of the Automobile Club of America, this time to be held in the Sixty-ninth Regiment's new armory, will go in strongly for demonstration rides to intending buyers. This means that between January 13 and 20 the big building will have a novel supplementary show outside, and Twenty-sixth street, Lexington avenue, and Twenty-fifth street will be daily hives of activity from early till late. With the imposing armory just emerging from the hands of the builders, the structure will receive less decorative attention than any previous show, the automobile club committee believing the public will be much better pleased to comprehend the architectural beauties of the spacious drill hall rather than to have it hidden by vari-colored bunting. The committee, however, has planned an effective and artistic scheme of stand decoration that will blend into the industrial picture harmoniously and invitingly without detracting from the character of the exhibition. The details have not yet been announced.

## TAKES UP RACE IDEA

### Technical Committee of A. C. A. Receives Classification Rules Proposed by Franklin

New York, Jan. 1—H. H. Franklin has submitted to Dr. Schuyler Skaats Wheeler, chairman of the A. C. A. technical committee, the following outline of rules to bring about his proposed racing classification by cylinder volume instead of by weight:

**Displacement**—The displacement agreed upon would be the maximum. Makers could use less displacement if they saw fit.

**Brakes**—The rules should require a double system of brakes.

**Speeds**—Each car should have at least two speeds, forward and reverse.

**Differential**—Each car should have a differential or its equivalent.

**Starting Engine**—To qualify a car should be so built that its engine can be started without pushing the car. In other words, the construction must be such that the engine can be started with the car standing still and the car put under momentum by the engine.

**Muffler**—Mufflers should not be required.

**Reasons**—Make no requirements which cannot be measured. Noise cannot be measured, therefore uniformity in mufflers could not be obtained. It would not be practical to say that each car could have the same muffler, as engines would be of different sizes and the same muffler would not give same results.

**Exhaust**—There should be no restriction on the exhaust, except that it must not exhaust in such way as to raise dust from the road.

**Number of Passengers to Carry**—Each car may carry only one man. If contestant wished to carry more than one man it would be allowable.

**Car Self-contained**—Each car should carry enough oil, gasoline and water for the entire race. It should also carry its own tire repairs. In other words, each car should carry absolutely everything required for the race and there should be no limitation as to what a car should carry. Repairs or adjustments or changes, the facilities for which were not self-contained in the car, should not be allowed. This refers to tires as well as to the car itself. This rule of course does away with having tire repair outfits along the route. In case of any sort of accident which the operator and his assistant—if he had one with him on the car—could not repair with the facilities with the car he would be out of the race.

**Drivers**—Drivers should qualify under rules and the committee should have absolute authority on the question of drivers. No drivers should be allowed to compete whose skill had not been demonstrated.

**Gasoline**—Gasoline of a certain specified and uniform quality should be furnished by the committee.

Mr. Franklin contends that a cylinder displacement classification will do away with the danger attendant on horsepower out of all proportion to the weight of the car, and instead of merely encouraging racing car builders to pile on power, will stimulate rivalry in the production of the greatest efficiency of speed per horsepower, all of which will be for the practical benefit of the industry and create more useful competition among designers than is inspired by the present creation of speed by mere increase of horsepower.

It probably can be assumed that Mr. Franklin's idea is to have various classes based on cylinder displacement. He has not yet stated whether his idea would prevent the establishment of a racing class with cylinder volume above the normal maximum practical or desirable for cars for touring use. It would seem that such a class should be permitted that high

speed to the limit of reasonable and safe construction might be attained in racing contests, at least on the Florida and other beaches, even if it were deemed advisable to restrict road contests like the Vanderbilt to touring car cylinder volume limit. The restriction of speed possibilities below the figures likely to be attained at Ormond in the coming tournament would, of course, rob the safe, straightaway beach races of any record-breaking features and, with this, much of their public interest. With a cylinder volume standard, of course, all weight restrictions would be removed. This would certainly be a move in the direction of safety.

### FRENCH CARD FOR 1906

Paris, Dec. 26—They scarcely seem to know what they want in France, as far as their sporting program is concerned. After definitely deciding to abandon high speed international contests, the Automobile Club of France then performed an about-face and a few weeks ago at the suggestion of interested French manufacturers decided to reconsider the matter of the Bennett cup race for 1906, but framed up conditions more suited to the aspirations of the French trade. Now we see that as quickly as the topic was revived just so quickly has it been dropped, and the Bennett cup race for 1906 is still in the air as far as France is concerned. This is probably due to the attitude of the French trade with regard to the Paris show. Apart from that, however, the international meeting of the club officials, which was held last week at the Paris salon, has resulted in the following fixtures being arranged: Cannes fortnight, March 8 to 21; Nice week, March 25 to 31; Monaco fortnight, April 1 to 15; Florio cup race, May 6; tour of France for motor cycles, May 13 to 24; electric car contest, June 1 to 3; Herkomer trophy competition, June 9 to 15; Kiel motor boat races, June 28 to 29; the Ostend meeting, July 14 to 17; British international cup for motor boats, August 6 to 18; Ardennes circuit race, some time in the first fortnight of August; Brescia week, August 26 to September 2; Semmering hill-climb, September 23; Chateau Thierry hill-climb, October 7; Gaillon hill-climb, October 28, and motor boat races on the Seine, November 2. With such a long and varied program France certainly ought to be able to keep awake without a Bennett cup race.

### ST. PAUL CHANGES

St. Paul, Jan. 2—The automobile agencies of St. Paul have selected their lines for 1906, and there will be numerous changes. The C. P. Joy Automobile Co. will continue with the Pierce, Packard, Franklin, Cadillac and Waverley electric. The Western Automobile Co., which opened its big brick garage and salesroom on Cedar street last summer, will make a vigorous campaign with the Oldsmobile, Peerless, Winton, Northern, and Woods and Baker electrics. The St. Paul Motor Vehicle Co., on Western avenue, will continue with the Columbia. The Fawkes Automobile Co. will sell the Rambler through its St. Paul agency, which had a prosperous season last year.

## TALK OF HEMERY TRIAL

### Kilometer Record Leads New Yorkers to Believe 2 Miles a Minute a Possibility

New York, Jan. 1—The special cable from Paris, under date of December 30, printed in Sunday's Sun, that the new Darraq 200-horsepower racer, built for the Florida and Cuban meets, has made good by breaking the kilometer record by doing 20 3-5 seconds, has aroused fresh interest in Ormond. A kilometer in 20.3-5 seconds means a mile in a shade under 33 1-5 seconds. The Napier's mile equivalent was 37 seconds. If the Hemery record is correct it would fairly indicate that the new Darraq is 4 seconds faster to the mile than the Napier, and considering the additional advantage of the beach course over any road, it looks as if Hemery stood a good chance of realizing Senator Morgan's 2-mile-a-minute dream for the Ormond-Daytona course. The probability of the Darraq being able on demonstrated form to turn the trick, however, hinges on the authenticity and the correctness of the time of its reported kilometer trial. Betting is now even among racing followers for and against 2-miles-a-minute being beaten this year. Macdonald's record mile with the Napier stands at 34 2-5 seconds. Harry L. Bowden covered a mile with his double-engine, overweight Mercedes, in 32 4-5 seconds.

Manager McWilliams, of the American Darraq Co., on his return from the Paris salon, brought some interesting news. In the first place, he says, the new Darraq is not made up of two engines complete, but is an out and out specially built eight-cylinder car. Nor will the Darraq hopes rest on Hemery and the eight-cylinder alone; for he says that Rupert Guinness, of the British brewing family, is to bring over and drive the 80-horsepower Darraq, in which Baras scored his 21 2-5 seconds kilometer. Besides these two cars the Darraq outfit will have the services of a middleweight car for the championships of that class.

No less important news connected with the Florida meet is the cable announcing that Lancia sailed from Havre last Thursday with a new 110-horsepower Fiat, specially rigged and geared for sprinting. It will be recalled that George W. Young, a broker, of this city, has bought the car in which Lancia made his phenomenal 80-mile-an-hour run in the Vanderbilt race. Harry W. Fletcher, who will pilot it, left for Florida with it Saturday. With him were Cedrino and the Nazaro Fiat. They will spend the intervening time in practice, tuning up the cars, experimenting with various gears and studying atmospheric conditions with relation to carburetion. Hollander & Tangeman, by the way, have also sent to the beach the Fiat which scored the middleweight track records last season.

According to the latest news from Boston, Louis S. Ross will not be the pilot of the steam racer F. E. Stanley has built to defend the Bay State Automobile Association's title to the Dewar cup, emblematic of the world's mile championship, which



Ross won in a steam racer of his own design last year. It seems that Stanley made Ross a liberal offer to drive the car and it was supposed the matter was settled. On reflection, however, Ross appears to have concluded that, as he himself is building touring cars, it might not be good policy to help boom a rival make. Further, it is said, he got an idea in his head that accepting pay to drive a car might not be in accordance with true sportsmanship. This is drawing it pretty fine, but so he feels about it. In view of Ross's refusal, F. E. Stanley will probably pilot the car himself.

The date of the closing of the entries is now but a week away and nominations must be in the hands of W. J. Morgan, 116 Nassau street, on Monday, January 8. The entrance fee is \$20 for each event except the Dewar cup, whose deed of gift calls for a fee of \$50. It is probable that the 15 miles free-for-all championship will be changed to 25 kilometers, or 15.432 miles, at the request of a New York daily, which desires to offer a handsome trophy for a race over a metric distance. The programme, which has twenty-seven events, including the time trials, has opportunities for all weights and powers. There are six free-for-all championships; two championships each for middleweight, heavyweight and steam cars, a championship apiece for middleweight and heavyweight cars of all powers, a Corinthian championship, and a free-for-all American championship, with three handicaps besides. The time trials will be at a mile and a kilometer for steam and the three gasoline classes. Every class and power has an equal number of events to which it is eligible. The distribution of the events has been received with general satisfaction.

A voting contest for the most popular girl in Florida, to whom will be assigned the honor of bestowing the gold speed crown in the 2-miles-a-minute race at the Ormond-Daytona meet, has been begun by the Times-Union, of Jacksonville, donor of the trophy. Vote canvassing committees have been formed in various Florida towns and cities, which are eager for the glory of naming the queen of the carnival.

Sale of seats on the grand stand, which will be erected in front of the clubhouse at Daytona, begin to-morrow, at the office of W. J. Morgan. There will be nineteen boxes, some holding six and others four persons. The price for the former will be \$10 per day and \$60 for the week, and for the latter \$8 and \$40. Single box seats will be \$2.50 per day. There will also be 300 reserved seats at \$1 each.

#### WINTON RETURNS A BENEDICT

New York, Jan. 2—Alexander Winton, who arrived at New York on the Celtic last Saturday, brought with him a bride. The pioneer designer was married on December 12 at the Windsor hotel, Glasgow, to Miss Labelle MacGlashan, of that city. Mrs. Winton is a relative of Mr. Winton's first wife, who died 2½ years ago. She spent several months in Cleveland last summer visiting her brother. The newly made bride and groom will make their home in the palatial residence completed by Mr. Winton, which ranks among the finest in the Forest city.

## HAS NEW IDEA IN MAPS

### Augustus Post Wants Uncle Sam to Mark Stone and Dirt Roads On Charts

New York, Jan. 2—That the motorists with touring tendencies would appreciate it if Uncle Sam would order the geological survey to distinctly mark upon the government maps which roads are made of stone and which of dirt, is what Augustus Post has assured Charles D. Wolcott, chief of the geological survey at Washington. Mr. Post is chairman of the good roads committee of the Long Island Automobile Club, which is leaving no stone unturned to advance the interests of motorists through improved highways. He is impressed with the idea that if the maps were properly marked so it would be possible to pick out the best roads in advance, the motorist would save lots of time and many hardships which at the present time he encounters traveling over highways of which he knows nothing outside of the fact that they run from one town to another. Mr. Post talked it over with Mr. Wolcott and the latter, while impressed with the feasibility of the scheme, recommended the Long Island clubman to put his views on paper and send them to the capital. Mr. Post has done this and in a letter to Chief Wolcott he says:

With reference to the conversation of a few days since with regard to differentiating between earth and stone roads and designating the same on the topographical sheets issued by your department, I beg to reduce the matter to the form of a letter in accordance with your suggestion.

At the present time the differentiation, as I understand it, is between roads used and unused, a double line designating the former and a single line with a parallel dotted line designating the latter. I would beg to suggest that what is known as a stone road, or a macadam road, be designated by a solid line or in any other suitable manner. The ground upon which I base this suggestion is:

1—That the difference between stone and earth is of sufficient importance to be noted and is of as much importance as the marking of farm houses, churches, etc., and I should even think of more importance than the marking of small rivers and streams and of the importance of navigable rivers and railroads. The number of these stone roads is not very large and the work necessary to ascertain their location would not be difficult. Most of the important facts could be ascertained from the highway commissioners in those states which have this form of road supervision, and in others from the state governments or actual field notes which you might have taken when any new work in this regard is projected.

2—In regard to the use of such information I would say that such existing maps as are available are of a very inferior nature and have been given out to fill a very wide demand, especially among those who use the road for travelling. The various states have issued from time to time maps showing roads constructed or work in process of construction. I inclose a copy of one compiled by the state engineer's department of New York, showing the extent and importance of the work projected within its borders. Massachusetts has issued a similar map, but it is not perfect. I beg to refer also to the work in which the American Automobile Association has been engaged during the last summer, that of getting out a series of maps at a cost of some \$12,000, making tracings of the government maps wherever obtainable and making a red plate to go over all the roads which are of superior character and following the main routes and highways of travel throughout New England and even as far west as Chicago. This immense amount

of work was necessary to be done in most cases by personal investigation and actual travel over the important routes so designated. This work, of course, is supplemented by adequate directions, but if the government sheets had been accurate in regard to the important highways, as they were accurate in designating the byways, wood roads and mere rights of way, almost all of this work would have been simplified, and I think it is not idle to ask that in view of the large amounts of money spent to improve the road they should be recorded upon the topographical sheets as well as upon the topography of the country of which they form a permanent and lasting feature.

I may say that, having traveled the national highways of this country several times and the Appian Way leading from Rome, I have been impressed with the fact that the stone foundation of a road is as permanent and lasting as any of the works of man, and I think more lasting than the bed of some rivers.

If you would kindly advise me the difficulties to be surmounted in order to accomplish this matter, the expense involved and the proper methods to pursue, I will consider it a personal favor and can assure you that any expense, I am sure, could be met by our association, and I know the value would be inestimable to the users of the roads throughout the country, and coming at a time when the good roads improvement is becoming such a strong factor in political life, Mr. Brownlow thought that nothing would be so potent as a revealing of the good example set in various parts of the country already. However, aside from any political or particular use, I think it would be sufficient merely to ask that stone and earth roads be differentiated in some manner that may seem to you proper.

It is believed by the members of the Long Island Automobile Club that Mr. Post will gain his point, for Mr. Wolcott was greatly taken with the idea and thinks he can bring about the reform.

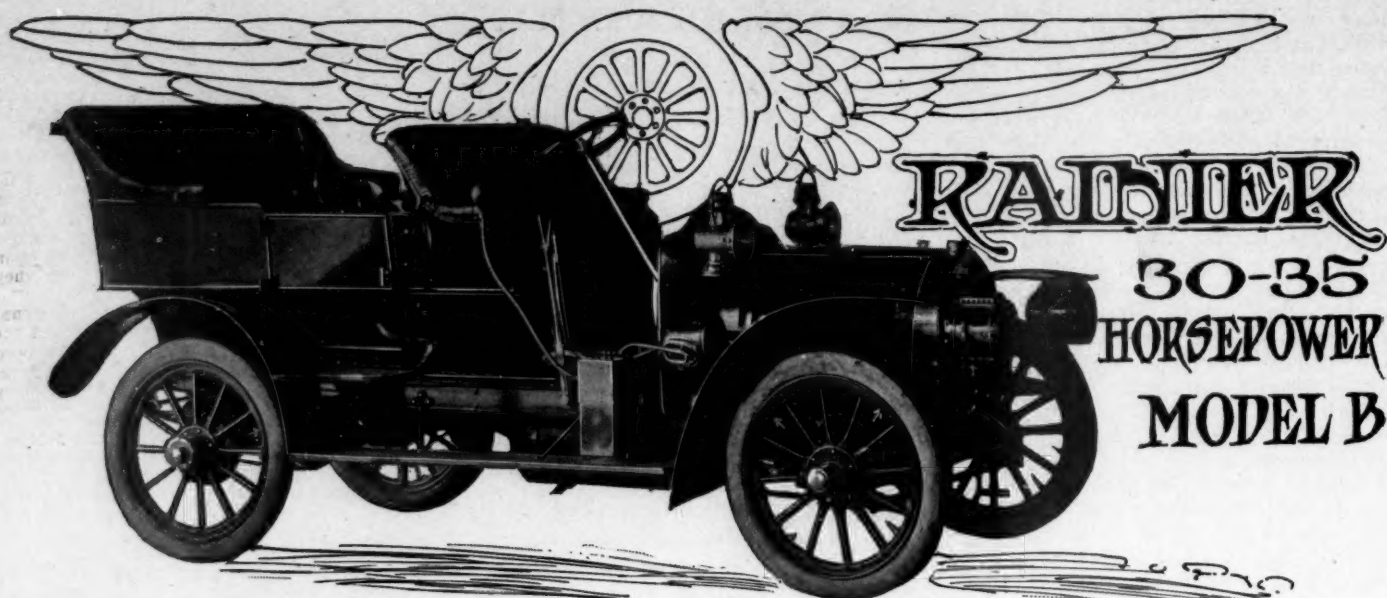
#### L'AUTO SEEKS INFORMATION

New York, Jan. 1—L'Auto, a Paris sporting daily, devoting much space to automobiling, has sent to this city Georges Dupuy, one of its editorial writers and one of the best-known writers on the Parisian press, who numbers among his journalistic achievements the first visit of a French reporter to the Klondike and a notable commission to write up the Panama canal, to establish a bureau of information.

"The idea of L'Auto," says Dupuy, "is to furnish European manufacturers seeking American trade with reliable information as to conditions and agents. We believe that for years to come European cars will find a paying market here, whatever may be the proportions attained by the enormous and rapidly growing American industry. On the other hand, we recognize from our experience in the bicycle industry that the American invasion of Europe is inevitable and will soon begin in earnest. There are openings in the European motor car market, which the United States can best fill and will be sure to take advantage of, so we propose to give American makers the same reliable information about the European market and conditions across the water as we will give our own manufacturers about theirs. Our service will be free and our information trustworthy and unbiased."

#### DINSMORE'S ESTATE

New York, Jan. 2—The will of Clarence Gray Dinsmore, filed in Dutchess county, New York, shows the value of the estate of the distinguished patron of international racing to be \$2,500,000.



UP TO the past year the Rainier Co., corner of Broadway and Fiftieth street, New York city, was identified only with the selling of electric vehicles, such as trucks and wagons of large carrying capacity and for use in the cities and towns, but last May a turn was made in the methods of the company and model A, the first Rainier car with a horsepower rating of 22-28 was brought out. For this season a new car, officially designated model B, has been built. It follows on the same general lines as its predecessor, with such changes as an increase in the wheel base to 104 inches, motor capacity raised to 30-35 horsepower and a make-and-break system of low tension ignition with current furnished by a Simms-Bosch magneto in place of jump spark ignition comprising such features as storage batteries and a La Coste coil.

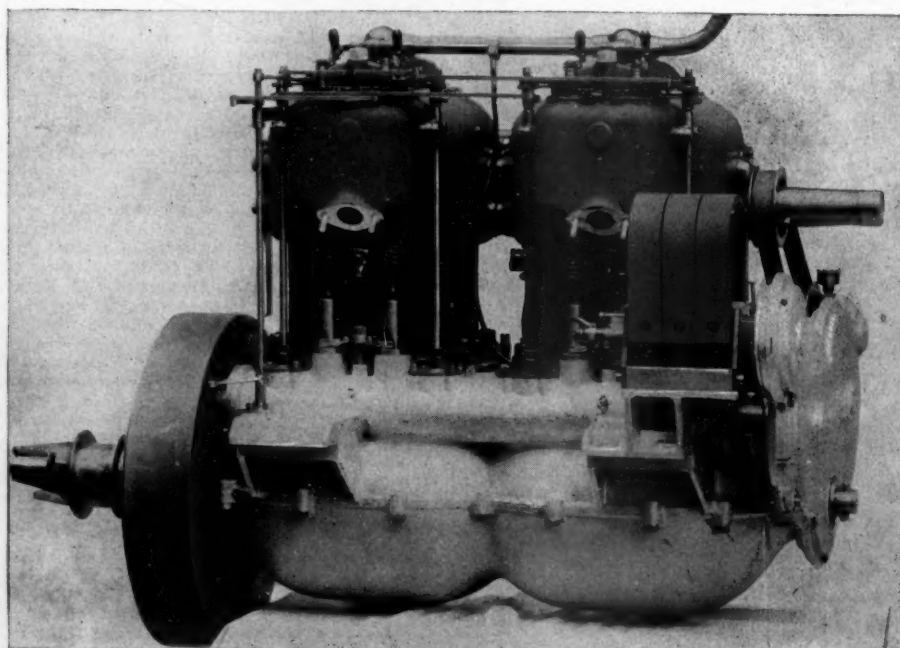
This change in the ignition scheme can be considered the feature of the present machine. To those not familiar with the Rainier models it will suffice to say that the present machine, made largely from stock parts, has a vertical motor in front from which power transmission is through a cone clutch, sliding gear transmission and cardan shaft to the floating rear axle.

Rainier frames are pressed steel channel sections, with the side pieces made parallel throughout, a subframe for the motor and gearcase carried on drop cross pieces and the frame members themselves in tapering section continued for the attachment of the front and rear spring hangers. Cross pieces are throughout made of channel section and are reinforced by separate gusset plates riveted in position. Supporting the frame is a set of four semi-elliptic springs, those in front being directly beneath the frame side pieces and the rear pair being swung outside and supported at the back end with the spring hangers through a shaft passing through both hangers and shackles. Because of the extra length of the rear pair, clips are used for holding the leaves in alignment. The front axle of I-beam section is a nickel steel drop forging and has the Elliott type of steering knuckles made, with the knuckles reversed so that the load is carried at

the bottom instead of the top. The front wheel hubs are carried on ball bearings and the steering knuckles and pivots are oil-hardened. Thirty-four by 4-inch Continental tires are used.

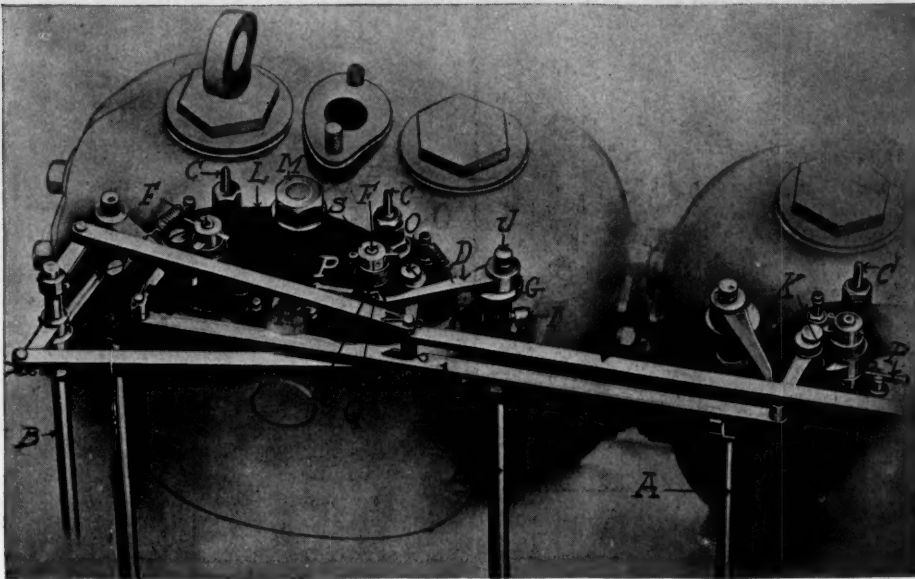
In the motor typical American construction is pursued except for the make-and-break ignition scheme, located on the cylinder heads. Such typical lines as cylinders cast in pairs with walls, water jackets, heads and valve ports integral castings; mechanical inlet and exhaust valves in the bottom of ports on the opposite side; inlets at the right and exhausts at the left; crankcase of aluminum divided into two parts, the top half having integral arms for resting on the subframe pieces and also carrying the three crankshaft bearings, the lower half of the case serving only as an oil reservoir and divided into a compartment for each pair of cylinders; half-time, magneto and pump gears enclosed in aluminum housing on the front of the case; exhaust valves removable through openings in the top of the ports, the openings covered by

caps retained by yoke and set screw and the two camshafts located within the crankcase and driven from enclosed gears are discovered. A closer view of the motor reveals that bronze gears are used in driving the camshafts; that the centrifugal water pump is gear-driven from the camshaft and takes its water supply from the base of the radiator, delivering it to the exhaust valve ports and the water in turn leaving the tops of the cylinder pairs and returning to the radiator top; that the cooling fan is not attached to the radiator but mounted on a shaft projecting from the front pair of cylinders and runs on ball bearings; that the lower half of the crankcase can be removed without dismounting any of the motor parts, and that through this opening all motor adjustments are made, and, further, that the inlet and exhaust valves are interchangeable and that the pushrod sleeves resting on the crankcase are secured thereto by yokes held in place by a nut on a vertical bolt passing through the opening. The valve springs rest in



INLET SIDE OF THE RAINIER MOTOR, SHOWING MAGNETO IN PLACE





DETAILS OF THE MAKE-AND-BREAK MECHANISM ON THE RAINIER MOTOR

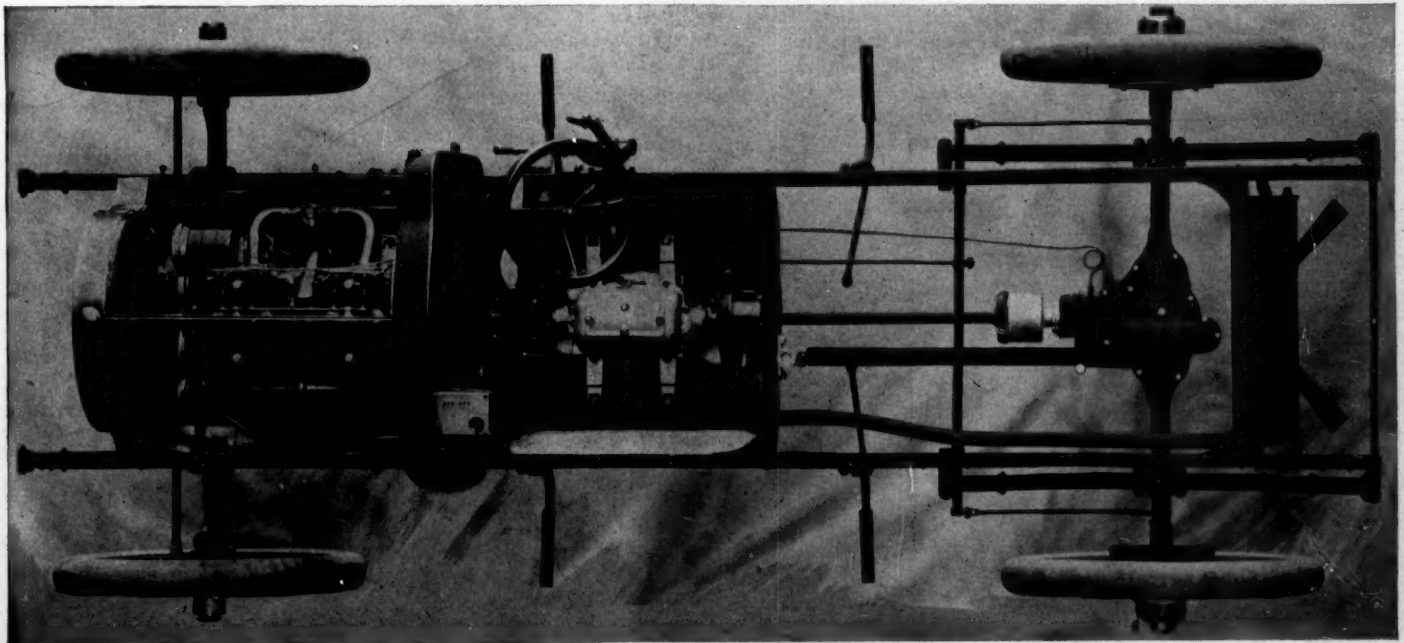
large cup-shaped washers pinned in position to the lower part of the valve stem. A Hill mechanical oiler provides lubrication to all of the crankshaft bearings, but the pistons and wrist pins are lubricated from the splash. Regarding parts of the motor which cannot be seen from the exterior, it might be added that the camshaft is forged in one piece, with the cams made integral, the pushrod rollers are case hardened, connecting rods are of nickel steel hardened at the piston ends, the wrist pins also hardened and held in a piston by a spring washer resting in a piston groove, brasses on the crank ends of the connecting rods are provided with special bearing knuckles and the pistons carry the usual quota of compression rings.

As previously mentioned, by far the most interesting part of the motor is the make-and-break ignition scheme. In this attention has been given to providing ample hardened surfaces at any friction point where wear would interfere with the timing of the spark. The Simms-

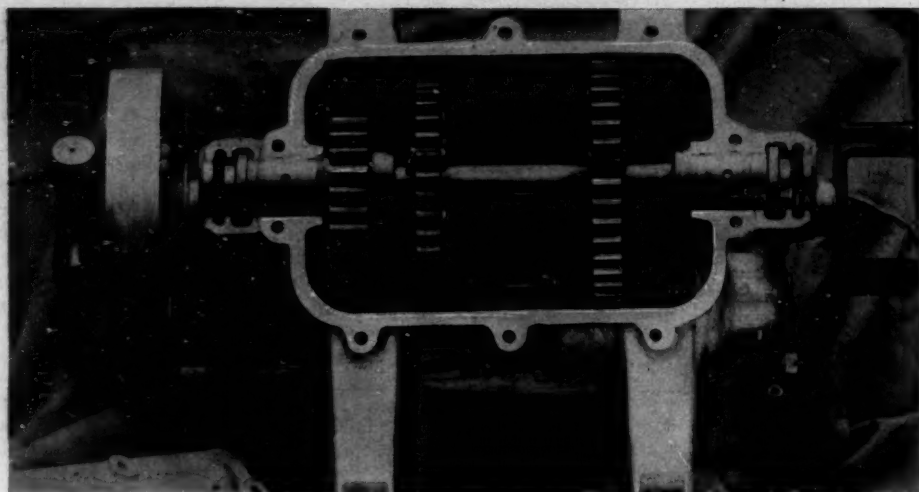
Bosch magneto is carried on a boss at the right front corner of the crankshaft and is gear-driven from the inlet camshaft by enclosed gears. The entire mechanism of the make-and-break system, including all parts affecting the timing of the spark, is concentrated on the top of the cylinder heads, where it can be quickly removed and easily inspected. It has been customary in make-and-break schemes of ignition to place the mechanical parts required in producing the spark on the sides of the valve ports and to operate them from pushrods the same as used for operating valves, but in the Rainier motor, instead of pushrods, a vertical rod which is revolved from the inlet camshaft through the medium of bevel gears, works the spark mechanism for each cylinder. Where the pushrod scheme is used for operating the make-and-break devices timing of the spark is frequently accomplished by the use of spiral cams on the camshaft and the entire shaft is moved endwise in varying the timing of the spark. This scheme

is not used, however, in the Rainier, but rather a separate timing mechanism carried on the cylinder heads.

In understanding the make-and-break scheme the reader would do well to follow the illustration, showing clearly the devices on the head of one pair of cylinders. The vertical drive shafts A are driven from the inlet camshaft by miter gears, the front and rear cylinder shafts being driven from separate gears, whereas the two center cylinder shafts are driven from the same camshaft gear, it being made with teeth cut on each end, one set for each shaft. For each shaft A a bronze bearing H is mounted on the corner of the valve port and on the top of this shaft is carried an operating crank G, held in position by set screw I. The top of the crank is turned eccentrically. On the top of the crank G is carried the operating lever D, held in position by a shoulder of the oil cup J, which is used instead of a stud and makes neater construction. Over each valve space is located the igniter block K, made of cast iron and set into the cylinder port and retained in position through a yoke L, the yoke being held to the top of the port by nut and stud. The bottom of the yoke rests in slots in the top of the igniter block and so retains it in perfect alignment. Current enters the mechanism through the insulated spark plugs C, which are screwed into the igniter blocks. At the bottom of the plugs are anvil-like constructions projecting into the explosion chambers. Current is conducted from the magneto through a single wire to a bus bar carried on the cylinder heads and from this bus bar through double-bladed knife switches, which span the tops of the spark plugs C and which can be cut out at will by a small handle furnished for the purpose. Each cylinder has an ignition shaft F, carried in the igniter plate, and which carries on its lower end within the combustion space an ignition arm at right angles to it and brazed in position. This arm swings through part of a circle of rotation and makes contact with the



PLAN VIEW OF THE CHASSIS OF THE 30-35-HORSEPOWER 1906 RAINIER CAR



SLIDING GEAR SET AND GEARCASE OF THE RAINIER CAR

bottom of the plug C, and when it is breaking contact with the bottom of C the spark which ignites the mixture takes place. At the time the arm on the bottom of F leaves the base of the plug C the current which was flowing when the points were together bridges the gap when they separate and passes in the form of a short hot spark.

In order to first understand how the movements of the arm on the bottom of F are made and the spark produced, it is necessary to know that N is the timing lever for varying the instant of the spark and is mounted on the igniter plates K and held in position by the stud O. P is the ignition shaft lever, B the spark control shaft supported at its base in bronze bearings mounted on the crankcase and operated by a lever connected with the steering column, which is in turn manipulated from the steering wheel. The movement necessary to produce the spark in one cylinder is as follows: The vertical shaft A revolves, the operating lever D is thrust forward and as the center J is eccentric this lever continues moving forward until it strikes the pawl Q, pushing it through part of a circle until it reaches its maximum position, when the pawl Q trips off the end of the lever D and is brought back to its original position by means of a spring not shown and which is fastened to the igniter shaft lever. The pawl Q is loose on the shaft F, to allow the contact arm of the bottom of F to strike against the anvil on the lower end of C with the least possible shock. As the pawl Q is turned by the lever D the rod F revolves under the tension of the spring R, one end of which is fastened to the pawl and the other to the tension collar S, which is fixed to F by a cotter-pin, as shown in the illustration. The lever P is taper pinned to the shaft F and has a quarter section slot cut on the top surface, admitting a tongue on the lower face of the pawl Q of eight sections to prevent Q from unwinding. When the pawl Q is turned the tension of the spring R turns the lever P, bringing the contact arm at the lower end of the shaft F in contact with the anvil on the bottom of the spark plug C, and as Q trips off the end of the lever D by means of the spring it is drawn back against a stop, thus breaking the contact within the com-

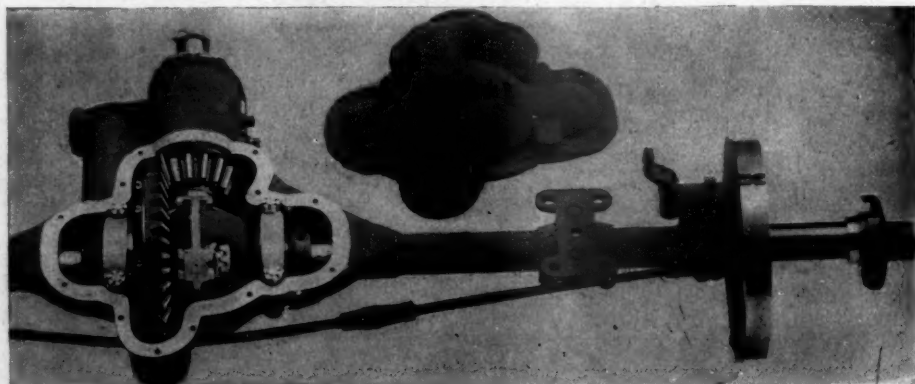
bustion chambers and producing the spark for the mixture.

The method of advancing and retarding the spark is through the shaft B and the several-rod combination V. A double arrangement is used whereby the levers N are advanced in the same direction. As the end of the lever N is eccentric, this determines the distance of D from the center of the pawl Q, and by swinging the lever out the end of the lever D strikes nearer the end of the pawl Q, thus Q will trip off the end of D quicker, thus advancing the spark. To retard the ignition the end of the lever D is moved inward, thus it strikes the pawl Q nearer its center and consequently requires a greater amount of time before the trip takes place, giving a late spark within the combustion chamber. The individual setting of the spark is by means of adjusting the operating crank G on the top of the drive shafts A by means of the adjusting screw I. The levers D and N are held in contact by means of a spring not shown.

The clutch is of the orthodox cone type contained within the rim of the flywheel and is connected through a universal joint with the change speed gearbox. By using a leather facing on the cone part ease in engagement is assured. In the sliding gear case nothing out of the ordinary exists. The case is an aluminum housing made oil tight, carried by a pair of arms on the sub-frame, and the split in line with the countershaft bearing, which occupies the upper portion of the case. The main shaft and the idler shaft are in the bottom of the

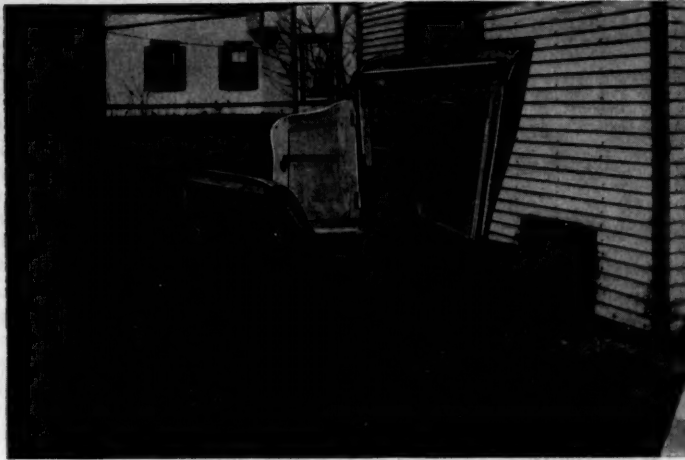
case. The upper half of the case is held in place by ten bolts and has a large inspection plate. Noticable points in connection with the case is that there are two idlers on the same shaft, one meshing with the mainshaft gear and the other meshing with the countershaft gear. The clutch shaft is continued to the rear end of the case, where it takes its end bearing within a short shaft which connects through universal joint with the cardan shaft to the back axle. The sliding unit is a pair of gears on the mainshaft. For direct drive one of these gears meshes with the internal gear on the short shaft coupling with the cardan shaft and on the other forward speeds, power is transmitted to the countershaft and then back. In reversing one of the sliding units is meshed with one of the idlers and the other idler slid into mesh with the countershaft gear. Both shafts within the gear case are made from high point carbon steel oil tempered and bearings made from the same metal are hardened ground and equipped with ring rollers. The pair of sliding units work on the squared mainshaft and are forged in one piece, whereas all the other gears are bolted to flanges formed integrally with the shaft. The cardan shaft made from oil hardened fifty-point carbon steel has universal joints front and rear. In the joints the forks are oil hardened drop forgings connected by case hardened pins. The rear axle is of the live type, in which the axle housing carries the entire weight of the car, the two drive shafts coupling the differential and road wheels only serving to propel the latter. For accessibility the differential housing is split horizontally above the bearing. The top half when removed exposes the differential gears and the pinion on the cardan shaft and the large bevel on the differential. Both drive shafts have a square fit within the differential gears, and at their outer ends transmit the power to the road wheels through positive jaw clutches, the clutch having a square fit with the shafts and locking with clutch on the wheel hub. In this axle the housings for the drive shafts extend through the hubs of the wheels and carry the bearings which support the wheel. The wheels run on ball bearings on these tubes and the differential gears also run on ball bearings.

Two internal expansion brakes are furnished, each within one of the rear hubs fully protected against dust and consisting of phosphor bronze shoes operating within a steel drum. Application is through the side lever. In addition there is the foot



RAINIER REAR AXLE AND DIFFERENTIAL, SHOWING INSPECTION CAP REMOVED





THE ARTZ TONNEAU OPEN



THE ARTZ TONNEAU CLOSED

brake in rear of the gearbox which operates on the cardan shaft and is of the regular type with bronze and steel contacting surfaces.

Aluminum is used exclusively in the bodies. Hand buffed leather upholstery, wide side entrances, rear seat 52 inches in length affording seating capacity for two adults, two auxiliary seats, a large locker beneath the rear seat with entrance from either front or rear, a concave pressed steel dash, large fenders, and running side board, are points noted in connection with the body.

#### BALDWIN'S SPRING CHECK

One of the illustrations on this page shows a recoil spring check or shock absorber made by the Baldwin Chain & Mfg. Co., of Worcester, Mass., to be attached to the rear axle of an automobile. The device is simple, consisting of a steel shell cylinder with a supporting eye on the top hooked to the floor or frame of the car body. Inside of this shell is a divided piston covered with oil-treated leather, which contacts with the sides of the cylinder. A set of toggle arms butting against each side of the piston segments has a yoke over the top which draws them down and the yoke is attached to the axle of the car by means of a leather strap. Any downward movement of the springs is not in the least influenced by the device, but the sudden upbound consequent upon one of the wheels dropping into a hole or hitting an obstruction is prevented by the friction of the piston segments and the cylinder. Thus when the jerk upon the yoke bolt is increased in velocity the friction upon the sides of the cylinder is multiplied by the square of the velocity. Springs within the cylinder return the piston to its normal position after each action of the checks. The device is so flexibly connected both to the axle and body of the car that any oscillatory movement of the vehicle does not interfere with its action.

#### ARTZ FOLDING TONNEAU

Two years on the market, the Artz folding tonneau, made by the Dayton Folding Tonneau Co., of Dayton, O., will be put out by one manufacturer on a special chassis as a regular model, while another wants it as an option on a four-cylinder 20-horsepower machine. When folded this tonneau seat lies entirely within the curve of the back. To get this full seat it

was necessary to make the upper half of the back a swell and the lower half a dip. To do this five layers of veneer, with the grain in the alternate layer crossing, are used, and glued together under a pressure of 162 tons. It will be seen by the illustrations that the inner edge of the back is reinforced by an ash strip  $\frac{3}{4}$  inch thick, 2 inches wide where the hinges are screwed to it and 1 inch wide where it forms the gimp ledge for the upholstery to be fastened to. This gimp strip as it is called is steamed and then bent on hot cast iron forms, rights and lefts, and as it cannot be strapped around the twist curves it is bent by means of V head clamps placed one beside the other and tightened down as the bending progresses, in fact the pressure of the clamps must do the bending, otherwise the wood would splinter off. The sill of the back is a cast iron piece membered up outside of the back where it forms a molding and inside of the back to the height of  $1\frac{1}{4}$  inches, screws being put through this inside member into the back so that there are no screw hole plugs in the outside of the back. This makes the back when painted impervious to the weather. The locks and fittings are all hard bronze, except the hinges which are steel. All metal to wood joints are filled with white lead. This tonneau weighs only 70 pounds, painted and upholstered. For light cars

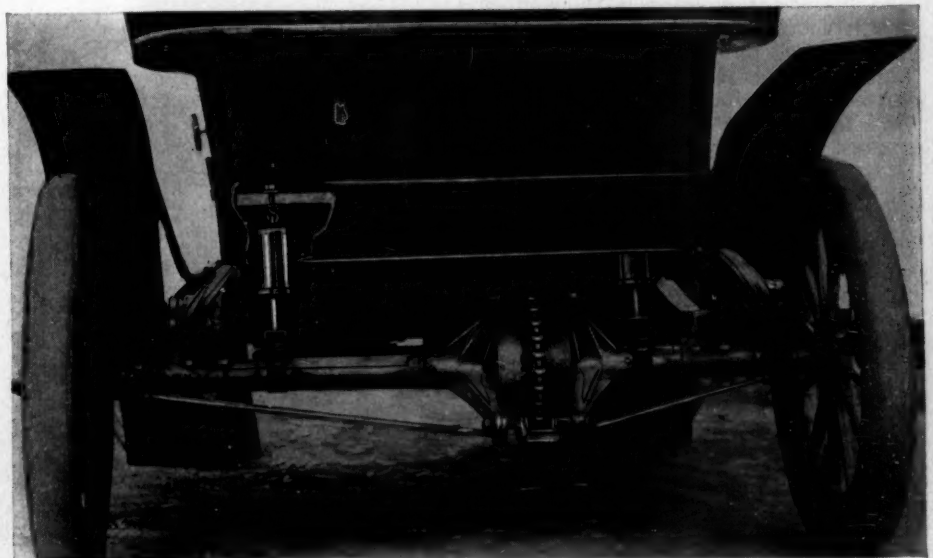
intended mostly for runabout purposes these seats are well-adapted. They are easily attached to the rear platform, when not in use fold into small space, not effecting the runabout appearance of the car and when in use afford sufficient seating for two adults. They are made to specifications in sizes to suit different makes.

#### OVERHEAD WASHING MACHINE

The H. Nicholsburg Mfg. Co., of New York, is now introducing for garage and private use overhead carriage washing machines. Connection may be made with any faucet, the water being carried to a spray above, which has also connection with a hand pipe. The water can be sprayed over the entire top of the machine and used to advantage in cleaning each part.

#### EIGHT CHIME HORN

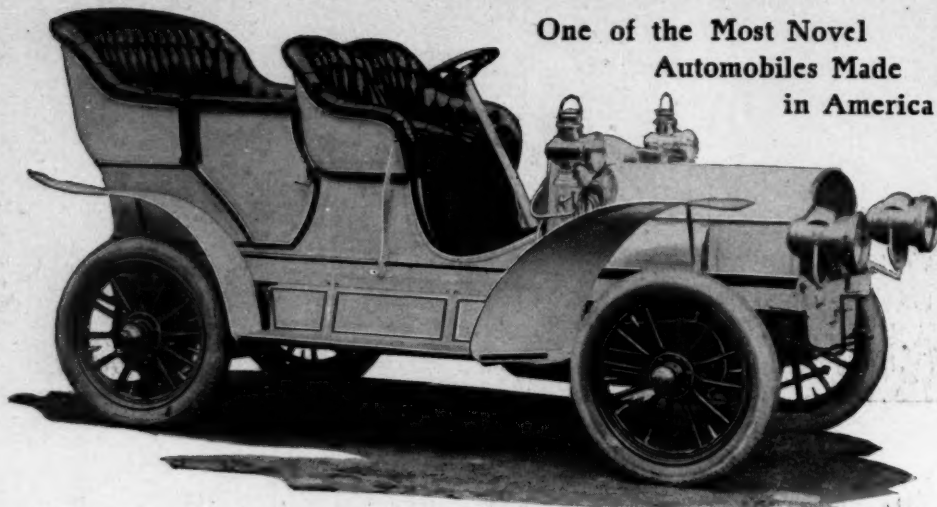
One of the novelties promised for the New York shows is an eight-chime horn for automobiles and motor boats made by the Gabriel Horn Mfg. Co., of Cleveland. This horn is attached to either side of the car and is played from the exhaust from the engine. Any ordinary tune can be played by means of a keyboard attached to the side of the car near the seat. The driver pulls buttons forming this keyboard, each button being connected with one of the pipes.



BALDWIN SPRING CHECK AND HOW IT IS ATTACHED TO A CAR

## NEW FOUR-CYLINDER MARMON

One of the Most Novel  
Automobiles Made  
in America



Pressed steel of channel section is used throughout in the rectangular frame, but in the triangular frame the side pieces consist of square tubes formed from flat steel and filled with a hickory bar of I-section. Front and rear springs are 39 and 38 inches long, respectively, and it is interesting to note that the front pair is placed between the two frames, whereas the rear pair is thrown outside of both. The wheel base is 90 inches. The front axle of I-section is slightly dropped between the steering knuckles and the spring seatings and further arched downward between the spring seatings. These seatings are saddles spanning the axle and clipped thereto. Elliott types of steering knuckles are used as are Timken roller bearings in the road wheels.

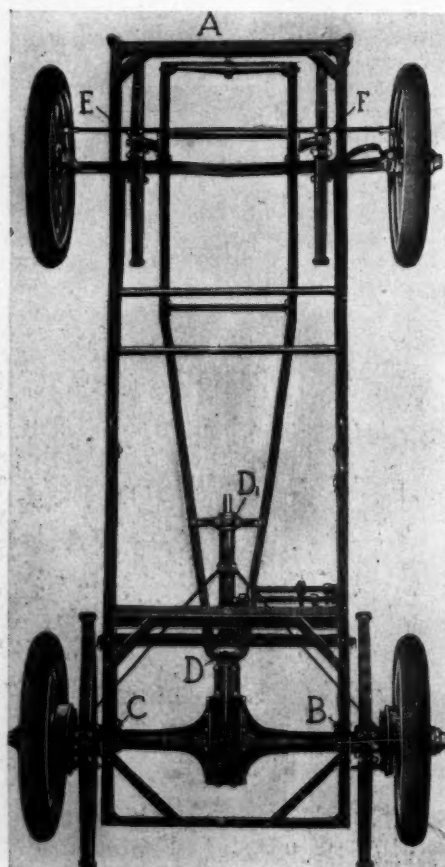
The motor illustrated is that used in the runabout, but it is an exact duplicate of the large machine except in measurements. Its feature is the mounting of the cylinders like the arms of a V, one pair on the left at right angles to the other pair on the right. This mounting makes the motor length slightly more than that of a two-cylinder motor and by making the crankshaft M with the adjacent throws at 90 degrees to each other the same regularity of explosion is obtained as when all the cylinders are placed vertically and the crank throws placed at 180 degrees. Air-cooling remains. Eighteen deep circular flanges, made integral with the walls, surround each cylinder from top to bottom, the lowest flange being close to the top of the crankcase and the top flange surrounding what would ordinarily be the cylinder head and within which rests the valve cages. In this year's machine the valve cages N bolt onto the heads instead of resting in openings in them. An air draught is created between the cylinder pairs by the fan P, carried high in front from a bracket S on the crankcase and driven by a flat belt T. The crankcase A is a five-sided box, one face serving as the base, two for the sides and the remaining two carrying the cylinders. Rather than split the case the ends are bored to take the bearing cages A1. Aluminum is regularly used in the case, which has on each side a pair of integral arms for support on the triangular frame.

Setting the cylinders at an angle to the vertical calls for a peculiar design of crankshaft, with its throws mounted as before stated. The shaft is bored from front to rear for lubricating all of its bearings. From the center bore radial holes lead to each bearing, so that each receives its oil supply under pressure from an oil pump in a separate oil compartment B carried on the base of the crankcase. In the rear of the oil compartment is a pump C, driven by the vertical shaft D through the spiral gears E from the camshaft. The pump, taking its supply from the base of its case through the pipe F, delivers it through another pipe G that has a duct connecting with the front end of the crankshaft, where is carried a revolving oil joint H, with which joint connects the central bore of the shaft, through which oil flows to all bearings. In order to lubricate the wrist pins the connecting rods are bored from the crank to the wrist pin bearings and the bore K in each at the lower end is

FEW changes other than those in the rear axle are found in either of the two 1906 Marmon cars, one a high-powered touring car and the other a medium-powered runabout with the same four-cylinder air-cooled motor used in the large car, only with a bore and stroke of  $4\frac{1}{4}$  and 4 inches respectively, whereas these measurements in the large car are  $4\frac{5}{8}$  and  $4\frac{1}{2}$  inches, a considerable increase over the measurements of 4 by 4 inches in last year's machine. The rear axle shows such changes as brake drums increased in diameter from 10 to 14 inches and each axle sleeve, made in one piece, with a varying diameter instead of in two sleeves joined together by a bushing. Setting the cylinders in pairs at 90 degrees to each other and cooling by circular flanges; using a double frame suspension with three-point support for each part, and fitting full elliptic springs in front and rear, are among the features retained by its maker, the Nordyke & Marmon Co., Indianapolis, Ind.

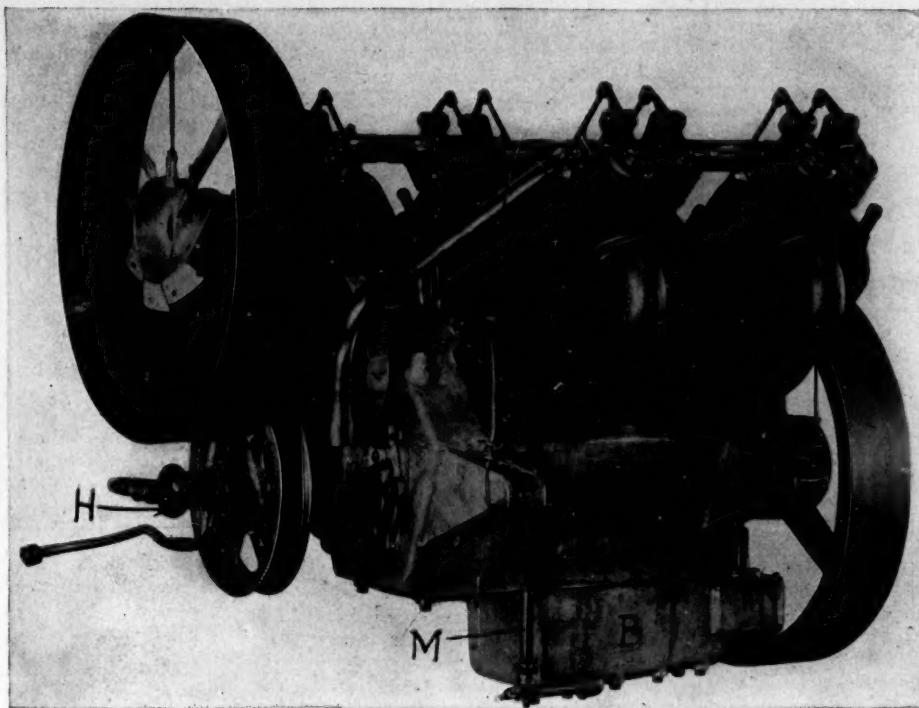
A glance at the plan view of the frame will reveal that a rectangular pressed steel part reinforced by wood for supporting only the body of the machine takes its support at three points, two in the rear at B and C, where it is pivoted to the top centers of the back pair of springs, and one in front at A, where a trunnion carries it on the triangular frame within it, which carries the entire motor and transmitting parts. This subframe, as it may be termed, takes its three points of support at E and F in front, where it is pivoted to the tops of the front pair of springs, and at D and D1 in the rear. These two bearings D and D1 are in reality one, as the cardan shaft from the gearcase passes through both. They are both on the same axis and consequently the apex of the inner frame can swing on the two bearings the same as if on one bearing, which would be the length of the two combined. The manufacturer in this simple yet complex frame design, has aimed to make a frame that will be free from strain when any one of the four wheels passes over an obstruction and is thereby raised from the ground. To understand how strain will not be transmitted to the frame when this occurs, consider that the right front wheel passes over an obstruction 5 inches high and then

follow the frame action. The triangular frame is raised at the support F, but being pivoted at D and D1 any elevation in the front at one side of the frame causes a part rotation at the points D and D1 and so there is no contortion. At the same time the rectangular main frame, because of its trunnion support at A, retains its horizontal position, not even tilting to the side. From this it follows that when the front wheels pass over obstacles the main frame does not tilt, but the triangular frame makes a part rotation on its support D and D1 and when either rear wheel is raised the main frame tilts at the rear but makes a part rotation on its support A and the triangular frame, owing to its rotatable support D, remains as if all four wheels were level.



PLAN VIEW OF MARMON FRAME





MARMON MOTOR, WITH OBLIQUE CYLINDERS

so placed that at a period in each revolution it registers with the bore in the crankpin at which time the oil is fed direct by the pressure of the oil pump up through the connecting rod and out into the wrist pin bearings, where after circulating through the bearings it drips back into the crankcase. Arrangements are made whereby the oil from the end bearings of the crankshaft cannot leak out of the case, but is returned to the oil well through a passage L. An external gauge tube M shows the height of the oil in the reservoir.

How the valves are placed and how opened is best shown from the sectional views of the motor. Exhausts and inlets are mechanically opened and placed side by side in separate cages in the cylinder heads, each cage being secured to the cylinder by a set of four bolts and secured to its pipe to the muffler or carbureter by another pair of bolts. One cam-

shaft Z suffices for both pairs of cylinders and both inlets and exhausts. It is carried in the top angle of the crankcase and is driven through a pair of large half-time gears housed in a compartment on the front of the crankcase. The cams, keyed in position, are in pairs, one for each cylinder, and surrounding each push rod is a spring resting between the top of the sleeve, carried on the crankcase, and a washer and nut on the rod. Each valve cage carries a pair of curved integral arms which support the short bolt, on which is pivoted the valve rocker arm. This arm, by the way, is not pivoted to the end of the pushrod, having only a cup receptacle for receiving the end of the rod. At the other end it has a hollow saucer-like expansion resting on the valve stem.

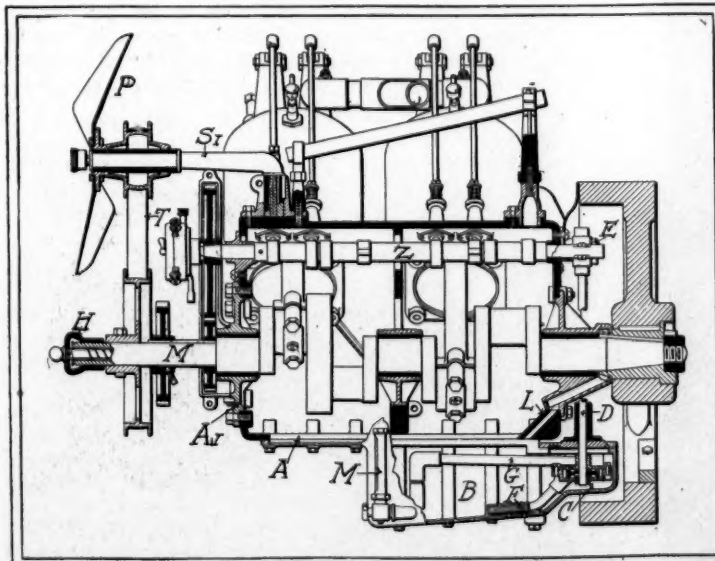
A new design of carbureter is carried on the forward left part of the motor and pipes lead to both pairs of cylinders.

The intake pipe connects the carbureter and the cylinders branches; one branch passes to the right and another to the left and each branch again separates, sending an individual pipe to each cylinder. The gasoline supply is carried in a 14-gallon tank, located in the car body. Throttle control is from the steering wheel.

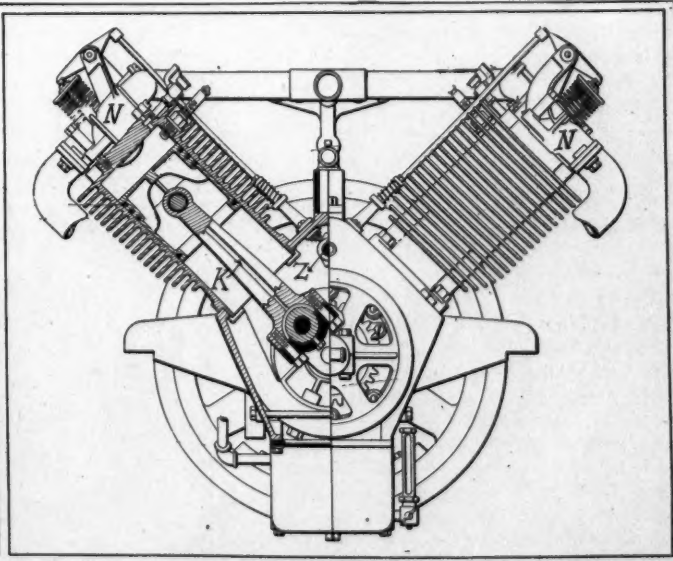
Ignition is by jump spark. The spark plugs are placed on the inner side of the cylinders near the heads and just beneath the intake valves. The current is supplied from a set of twelve dry cells, which can be used in separate groups or in parallel for reserve. The commutator is carried on the forward end of the camshaft and consists of a flat disk of insulating material carried on a metal back. Current from the batteries is led through a four-vibrator coil on the dash. Advancing and retarding of the spark is from the steering column.

Owing to the front end of the crankshaft carrying a revolving oil washer, the starting crank cannot be inserted thereon and a separate shaft beneath the crankshaft is used for starting. On this shaft is a spur gear meshing with a similar gear on the crankshaft. The lower shaft can be shifted longitudinally by drawing or pushing on the starting crank. It is retained in either of these positions by a spring plunger and when in the idle position a spring catch holds the starting crank to a cross piece of the frame.

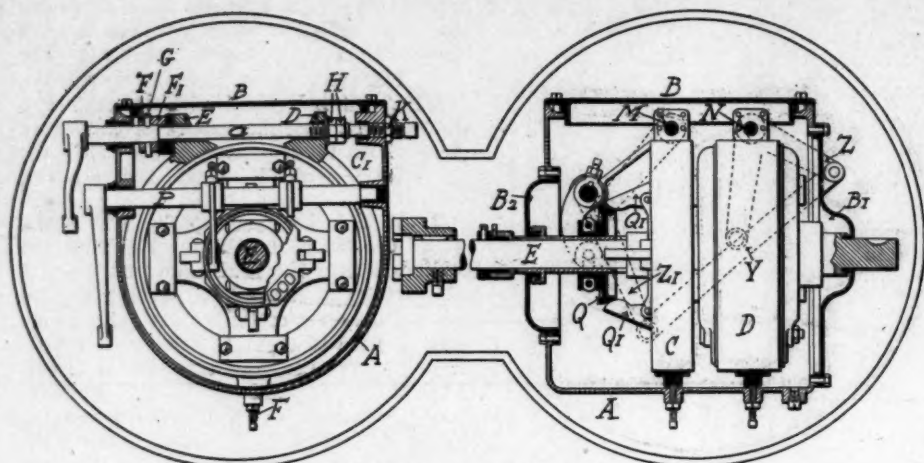
The planetary gear set, giving two forward speeds and one reverse, is different from the ordinary styles used. It is enclosed within an aluminum housing A of U shape cross section long enough to contain the low speed and reverse drums C and D. The top of the case is a cover plate B and in their ends are the bearing plates B1 and B2, the former the entire size of the case and the latter not half the size. Owing to shaft drive the case is mounted on the subframe with its shaft extending from front to rear, and in line with the crankshaft and propeller shaft. The shaft E works in plain bearings. The low speed drum D and the reverse drum C are surrounded by split bronze bands, that on the former shown as C1. These bands have at their ends lugs, one D



SIDE SECTION OF THE MARMON MOTOR



END SECTION OF THE MARMON MOTOR



MARMON TRANSMISSION GEAR

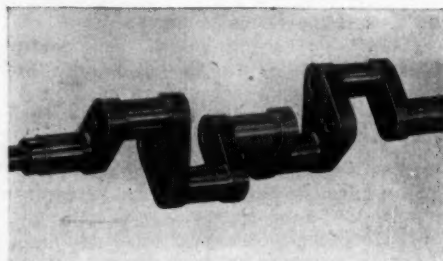
slotted and the opposite lug E drilled. Rods M and N carry the bands at the tops and are supported at the bottom centers by set screws F entering through bosses in the bottom of the case. In the end section one of the rods M and N is marked C and its method of entering the slotted and drilled ends of the bronze friction bands is shown. The rod C carries on its left end a double spiral cam, with the spiral faces F and F1 pinned to the shaft at G. One cam face bears directly on the drilled end E of the band. The end D of the band is retained by a nut and locknut H on the shaft C. It can be seen that a part revolution of the shaft C will draw the two ends of the band C1 together, tightening the band on the drum and stopping it from rotating, and that an opposite movement of the shaft C will separate the ends of the bands. A set screw K is furnished on the right end of the shaft, so that the gripping power of the band C1 can be varied and the band adjusted so that when not in use it does not bear on the revolving drum.

On high speed the drive is direct and is gained through a sliding cone Q working within four dog levers Q1, which when expanded work the high cone clutch, the shaft P with lever being used in sliding the cone Q. The clutch consists of a phosphor bronze double cone made to engage with a double castiron female part. The four dog levers Q1 press against an armed center of plate steel bolted to the cone clutch. By means of a light spring made from a pair of saucer-like metal plates riveted together at their peripheries the clutch disengages when the cone Q is withdrawn.

High and low speeds are operated by a single lever, a pedal is used in reversing. Through levers Z and Z1 and a link Y the high speed clutch and low speed brakeband are so interconnected that when the high speed clutch is engaged the low speed brakeband is released and vice versa. The levers Z and Z1 and the connecting link Y are placed outside of the casing A, enclosing the gear set. All gears used in the case are of nickel steel, 8 pitch. The planetary gears rotate on phosphor bronze studs, and the driving pinion is forged integral with the shaft.

Extending from the gearcase is the cardan shaft to the back axle. This runs in dust-proof roller bearings within a tube

or quill connecting with the bevel gear housing of the axle. The lower or inner frame of the chassis takes its single rear support on this tube, and from either side brace rods connect with the axle ends and aid in holding the shaft tube in position. The rear axle is of the floating type, in which the road wheels are carried on the axle housing and the drive shafts required only in propelling the road wheels. The spur gear differential is contained within a large central casing made in three parts—a central circular band and two circular



MARMON CRANKSHAFT

end plates that have central sleeve parts, in which is carried the housings for the axle drive shafts. These shafts extend through the wheel hubs and carry the roller bearings for the road wheels. A jaw type positive clutch locks each wheel with its drive shaft. End ball thrust bearings are used in the differential casing.

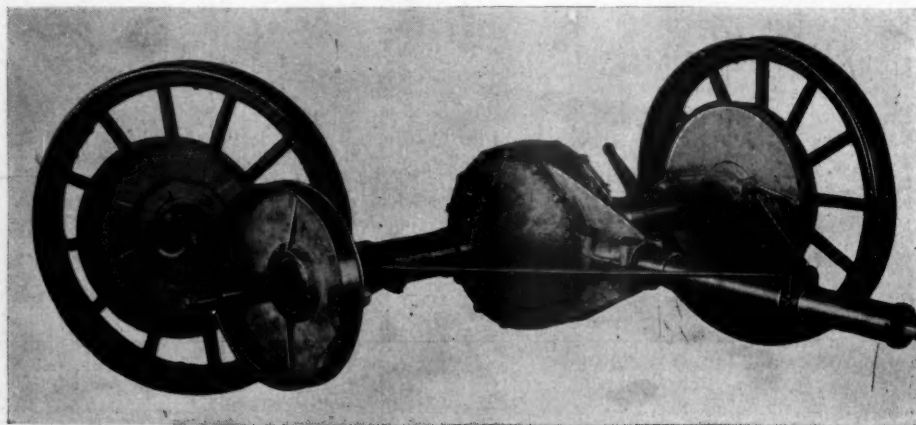
Braking is through a pair of internal expanding brakes carried in dust-proof drums on the rear wheels. The brake shoes are self-aligning and adjustable and

when in use contact throughout their length with the interior of the drum and when not in use are held from the drums. The connecting rods to them have a take-up adjustment and are coupled with a single tree, or equalizer, which causes an equal tension on both brakes. A foot lever connects with the equalizer for applying the brakes.

Steering is through a hand wheel mounted on an inclined column, the column carrying on its lower end a steel worm keyed in position and meshing with a bronze sector, both enclosed in an oil and dust-tight aluminum case, clamped by a pair of brackets to two other tubular supports carried by the main frame side pieces. The sector is made in halves clamped together, the clamping bolts passing through an oblong slot in one half and a hole in the other so that any wear can be taken up. It is made of bronze and secured to its shaft through a pair of keys placed at right angles and the shaft itself is made integral with the arm with ball joint for connection with the tie rod connecting the steering knuckles.

The muffler is carried between the transmission and the flywheel of the motor and the exit pipe leads to near the back axle. A cutout worked by pedal is fitted. Rear seats considerably higher than the back of the fronts, hollow metal dash enclosing the usual complement of electrical parts such as coil and switch, arched top radiator with screen front, flaring front fenders, smaller rear ones and a running board connecting them are a few of the body points. Tonneau doors are made slightly triangular and between the running boards and the body is a plate which protects against the throwing of mud. The car control centers with the one lever for the forward speeds, a reverse pedal, a brake pedal and the throttle and spark levers on the steering column.

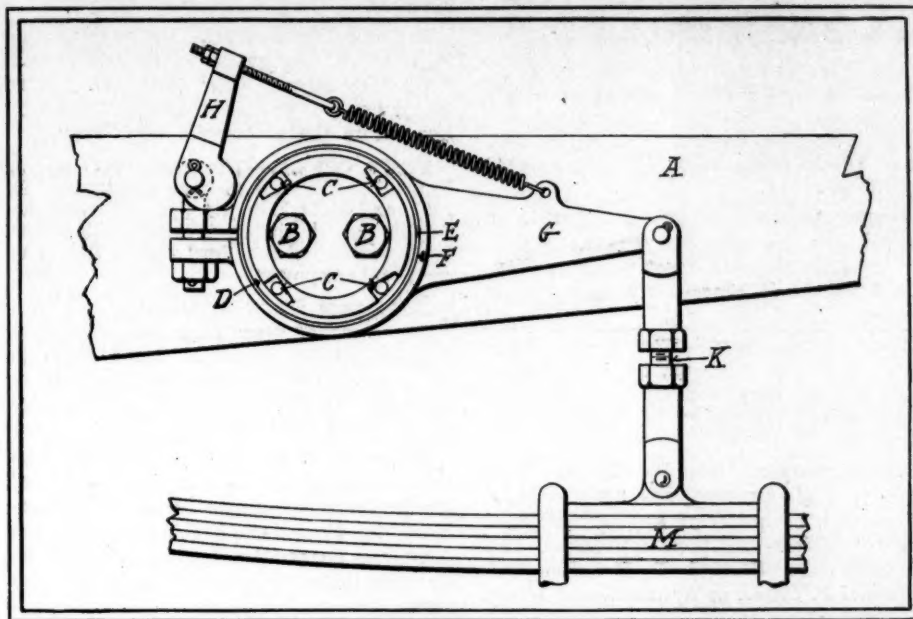
The Marmon frame support, cylinder design and gear case have been under continued test for a couple of years, and the flexibility of the double frame suspension, the feasibility of mounting the cylinders in pairs at 90 degrees to each other, the cooling of them by circular flanges, and the reliability of the gear case have all been fully tried out. The car while as yet not manufactured in quantities has shown its right to rank among the well made American machines because of its economy of fuel, flexibility of control.



DRIVE SHAFT, DIFFERENTIAL HOUSING AND REAR AXLE OF THE MARMON



## KELSEY'S NEW SPRING SUSPENSION



KELSEY FRICTION AUTOMOBILE SHOCK ABSORBER

The Kelsey spring suspension, invented by C. W. Kelsey, of the Maxwell-Briscoe Motor Car Co., Tarrytown, N. Y., differs from the accepted types of shock absorbers in that it does not prevent the free action of the spring when it is going down under a pressure but hinders the rebound. The inventor claims this is the action of the true anti-shock device, permitting free spring action one way and only affecting the rebound, which is the disagreeable part to the occupants. To the frame A of the car is fastened a central disk by a pair of central bolts B B. In the disk's periphery are four cam slots, in which are as many small rollers C and bearings on these rollers is a steel friction band D split crosswise to give a certain elasticity as the rollers come and go. Surrounding this band is a fibre band E which takes the thrust between the friction band D and the split hub F of the arm G. The rear end of the hub is split and has two extending lugs. Secured in the lower lug is a bolt which passes freely through the upper lug and bearing on this lug and pivoted on the bolt is a cam with the upwardly extending arm H which is in turn connected with the arm G through a helical spring shown in the illustration. This spring is adjustable in its tension by virtue of the rod connected to its end and passing through the top of the arm H. Connected with the bottom of the arm G is the double adjustable rod K which has a pivotal connection with the spring M of the car through the medium of a short leaf placed on top of the other leaves of the spring. This short leaf is provided with a pivoting lug. When the car goes over a bump the car frame A moves toward the spring M and as a consequence throws up the arm G. This action is without resistance on the part of the device but as soon as the frame and spring tend to separate, or in other words when the rebound begins, the four rollers C engage with the friction band D and cause a braking action to start up between this band and the fiber band E. The tension on the brake is at all times self-adjusting

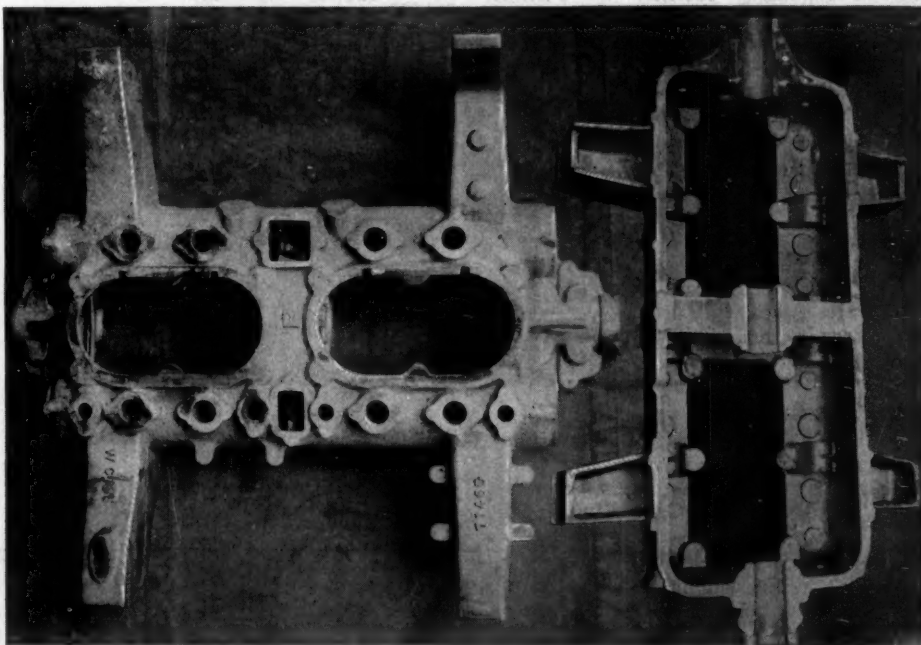
both as to tension and wear because of the cam bearing on the upper lug of the split hub and the coil spring the degree of tension being governed by the eye bolt passing through the arm H. The device can be attached equally well to semi or elliptic springs, and to front as well as rear springs. By varying the adjustment of K the action of the shock can be made easy or severe.

### PARSONS BRONZE AND BRASS

Parsons manganese bronze will be used in the manufacture of automobile casting during the present season to the extent of a couple of million pounds, according to one of the leading men in the bronze industry and one closely connected with the William Cramp & Sons Ship & Engine Building Co., Philadelphia. This concern is at present turning out such automobile castings made from this material as middle

parts for motor crank cases, pieces so designed that the cylinders can be carried on the top part of them and an aluminum oil reservoir attached to the bottom. Gear boxes made on the same principle are shown, the middle portion carrying the main and countershafts of the set and having four arms by which the case is carried on the main frame of the machine. Besides these castings others such as differential housings and other rear axle castings, bearing cages for ball or roller bearings and many other castings in which great strength and little weight are the points to be attained. The companion metal of Parsons manganese bronze, Parsons white brass, is making headway as one of the high grade bearing metals on the market. Bearings of this metal have been in use for many years and the claim is advanced that its wearing qualities are unequalled by that of any other metal now on the market. The Cramp concern estimates that the amount of this metal that will be required during the present season will reach 500,000 pounds. Bearings of this metal are made by the Cramp firm.

Parsons metals have enjoyed a long and successful run in this country and abroad and their use is constantly increasing. Because of their great tensile and elastic strength combined with light weight they are admirably suited for motor car construction. As a complementary metal the bronze has in aluminum an associate which adds immeasurably to its value. Bronze has the strength for supporting parts and aluminum, the feather of the metal trade, supplies the enclosing parts, without adding any perceptible weight. Besides crank and gear cases, a host of smaller castings are now made from Parsons bronze, in fact, any casting requiring great strength and wearing qualities can be made from it. Brackets for carrying heavy motor parts are frequently made from this metal. To these can be added many of the other parts needed in a motor such as bearing cages, pushrod guides, valve port caps and other parts.



SAMPLE OF CRAMP COMPANY'S PARSONS BRONZE CRANK CASE CASTING

## AMONG THE MAKERS AND DEALERS



GARAGE OF THE HOL-TAN CO.

**Fiat in Philadelphia**—Another newcomer was registered for Philadelphia's automobile row last week—H. Allen Dalley, who has secured the local agency for the Fiat.

**Archer & Co. to Locate**—Archer & Co., who now have the American agency for Hotchkiss and de Leon cars, will soon occupy their new salesroom at 1597 Broadway, New York.

**Frayer-Miller in New York**—The Frayer-Miller Automobile Co., of New York, will be located hereafter at the corner of Sixty-fifth street and Broadway. Its present quarters have been re-released to C. B. Rice.

**Motor Sleigh**—Edward S. Fell, of Winchendon, Mass., is the inventor of a motor sleigh. The sleigh is steered by moving the front runners while the power is supplied by a high speed air-cooled motor attachment to the front part of the sleigh.

**Pontiac Officers**—Officers have been elected by the Pontiac Motor Co., the new concern organized recently at Pontiac, Mich., as follows: President, Dr. V. H. Wells; vice-president, George E. Fisher; secretary, Albert Burton; treasurer, F. L. Perry. The company will construct commercial vehicles and a combination pleasure and commercial truck.

**Bacon with Knox**—Richard T. Bacon, who has been manager of the Studebaker Automobile Co., Chicago, has resigned that position and will be associated with George Crane, manager of the Knox Automobile Co.'s branch for Chicago and the west. Mr. Bacon will devote his time to the pleasure cars, while Mr. Crane will look after the commercial end of the business.

**Toledoans Interested**—The Toledo Motor Car Co., of Toledo, O., and the Clinton-Close Co., the latter operating a large department store in that city, have joined hands to take two trainloads of people to New York city during the week of the shows. The two specials will cost the companies in the neighborhood of \$5,000. The Toledo Motor Car Co. will have two special cars in each train, while the remainder of the trains will be taken by

the Clinton-Close people. The trains will leave Toledo at 4 o'clock on Sunday evening, January 14.

**Haupt Auxiliary**—Harry S. Haupt, of New York, has opened a Thomas branch at 537-539 Mercer street, Jersey City, which will be in charge of Frank D. Garlinger.

**Feed for the Trade**—The Hyatt Roller Bearing Co., of Harrison, N. J., will give their annual show and trade banquet at the Waldorf-Astoria on Wednesday, January 17.

**Trade Addition**—The Weed Chain Tire Grip Co., of Syracuse, has been incorporated with a capital of \$10,000 to manufacture vehicles and their accessories. The directors are Howard P. Dennison and Herschel P. Chase, of Syracuse, and Harry D. Weed, of Canastota.

**Maine Move**—Having taken on the Thomas, Stevens-Duryea and Oldsmobile for this year, the Maine Automobile Co., of Portland, Me., claiming to be the oldest automobile firm in the state, has contracted for a new garage at the corner of Free and South streets.

**Whiting Succeeds Brock**—Marcus I. Brock having resigned his position with the Autocar Co. to become assistant manager of the Association of Licensed Automobile Manufacturers, Allan H. Whiting has been appointed sales manager of the Autocar company. Mr. Whiting was formerly sales manager of the Edison Stor-



## NEW INCORPORATIONS

**Augusta, Me.**—The Snow-Webster Automobile Co. has been incorporated to manufacture vehicles, etc., with a capital stock of \$10,000.

**Huntington, N. Y.**—The Huntington Automobile Co. has been incorporated with a capital stock of \$5,000. The company will engage in the manufacture of automobiles, cars, carriages, boats, etc.

**Toronto, Ont.**—The Imperial Electric Motor Co. has been incorporated with a capital stock of \$200,000, to manufacture power machinery, automobiles, etc.

**Rochester, N. Y.**—Among the recent incorporations is that of the Gearless Motor Cycle Co., with a capital stock of \$50,000.

**New York**—The Weed Chain Tire Grip Co., manufacturer of vehicles, has been incorporated with a capital stock of \$100,000.

**New Rochelle, N. Y.**—The Westchester Motor Vehicle Co. has been incorporated with a capital stock of \$25,000.

**Watertown, N. Y.**—The Watertown Automobile & Supply Co. has been incorporated with a capital stock of \$5,000, and will manufacture and deal in automobiles and automobile supplies.

**Toledo, O.**—The Atwood Automobile Co. has been incorporated with a capital stock of \$40,000. The object of the concern is to own and operate an automobile garage in the residence section of the city. The capital stock has all been paid in and the company is negotiating for a suitable site for the erection of its plant.

**Bay Shore, N. Y.**—The Covell & Crosby Motor Co. has been incorporated with a capital stock of \$20,000.

age Battery Co., Orange, N. J., previous to which time he was in the automobile business.

**Rushing Lozier Work**—By pushing the work on its new garage at Broadway and Fifty-fifth street, New York, the Lozier Motor Co. will be able to occupy the premises before the automobile show opens.

**Ford's Old Car**—The automobile which Henry Ford is said to have constructed in 1891 and on which his fight against the Selden patent hinges, is now at the New York branch of the Ford Motor Co. The car is 4-horsepower.

**Winchester Demonstrating**—W. F. Winchester reached New York last week with the six-cylinder Franklin, in which he is on a demonstrating tour of the eastern agencies. It was the first 1906 six-cylinder car to reach the metropolis.

**Takes No Chances**—That there may be no possible delay in early deliveries of Berliet cars, which are built simultaneously in France and this country, the American Locomotive Co. has ordered from the French factory complete parts for fifty cars.

**More Room Needed**—It is announced by the Dayton Electrical Mfg. Co. that it has been necessary to enlarge its lead bottle Apple storage battery department to twice its old capacity. The company has also brought out a new storage battery charger which constantly charges the battery while the engine is running.

**Imports in November**—According to the latest returns sixty-one automobiles, valued at \$221,727, were imported into the United States during November, while during the 11 months ending November 451 cars, valued at \$1,697,026, were imported. During these periods the imports of automobile parts were valued at \$19,653 and \$106,327, respectively.

**English Daimlers Arrive**—Four of the new English Daimler cars, the advance guard of the Decauville company's salesroom supply, have been turned over by the custom house. The company is also exhibiting an inside-driven cab, finished in dark blue without and mahogany and broadcloth within. It is set upon a new Decauville chassis with engine of 12-16 horsepower.

**Brown-Lipe Incorporates**—The Brown-Lipe Gear Co., of Syracuse, N. Y., which has heretofore been a partnership, has been incorporated with a capital stock of \$150,000. The directors are Alexander T. Brown, Willis C. Lipe and H. W. Chapin. The company manufactures steering and transmission gears for automobiles. There will be no change in management on account of the incorporation.

**November Exports**—Figures compiled by government experts show that during November automobiles and parts to the value of \$129,359 were exported to various foreign countries, which is an increase of \$23,272 over the exports for the same month last year. During the month shipments were made to the following countries: United Kingdom, \$27,005; France, \$8,028; Germany, \$1,808; Italy, \$5,580; other European countries, \$15,085; British North America, \$11,996; Mexico, \$12,738; other West Indies and Bermuda, \$6,809; South America, \$6,974; British East Indies,



\$2,495; British Australasia, \$25,571; other Asiatic and Oceanic ports, \$287; Africa, \$4,791; other countries, \$222.

**Benz Only One Left**—The Mead Cycle Co. has relinquished the agencies for the Globe, Moline and Gale, and will devote all its energies during the coming season to the marketing of the Benz car, of which this company is the sole American importing agent.

**Rainier in Chicago**—The Rainier company's Chicago branch will be located at 1255 Michigan avenue, the quarters formerly occupied by the Arthur Banker Co. The Chicago branch will be in charge of E. O. Cordner, who was for many years with Klaw & Erlanger.

**Join A. T. C. A.**—Eight new members are reported for the Automobile Trade Credit Association, the Brown-Lipe Gear Co., Pennsylvania Rubber Co., Automobile Supply Co., National Carbon Co., R. E. Dietz & Co., Hartford Suspension Co., Continental Caoutchouc Co. and A. H. Funke having recently joined.

**Fiat at Home**—Hollander & Tangeman, on Tuesday of this week, took possession of their new garage at the northwest corner of Broadway and Fifty-sixth street, New York. No automobile will have a finer home in the metropolis than will the Fiat, for the building ranks on a par with the motor car palaces now completed and in erection on upper Broadway in size and elegance of equipment. The building consists of five stories and basement. It is built of brick, steel and concrete throughout. It is 150 feet deep and 60 feet wide, with a floor area of from 50,000 to 60,000 square feet.

**Exports for 11 Months**—Automobiles and parts to the value of \$2,499,010 were exported from this country during the 11 months ending November, 1905, as against a value of \$1,682,994 for the same period of 1904 and \$1,419,481 for the corresponding period of 1903. The shipments, by countries, during the 11 months of this year were as follows: United Kingdom, \$631,787; France, \$262,058; Germany, \$103,806; Italy, \$159,905; other European countries, \$237,902; British North America, \$513,761; Mexico, \$162,780; other West Indies and Bermuda, \$131,361; South America, \$55,912; British East Indies, \$31,097; British Australasia, \$111,119; other Asiatic and Oceanic ports, \$60,878; Africa, \$33,528; other countries, \$3,116.

**Revive Old Association**—A dinner given at the Chicago Automobile Club last Thursday night brought about the rejuvenation of the old Chicago Automobile Trade Association. Thirty-seven of the local dealers attended the spread, of which number sixteen held memberships in the association which has been practically lifeless for some time. It was determined that instead of forming a new organization the old one be revived, so Walter Githens was made temporary chairman and Ralph Temple, Frank P. Illsley and H. Paulmann named as a committee to revamp the rules and constitution and to draft measures regarding commissions, the price to be paid for second-hand cars and how they shall be handled. It is more than probable a clearing house will be established. The committee expects to report at a special meeting of the association this month.

## BRIEF BUSINESS BITS



**Dixon, Ill.**—The agency for the Maxwell car has been taken by Phil Miller.

**Independence, Ia.**—T. S. Wharton has purchased the interest of Kennedy & Son in the local garage.

**New York**—Announcement has been made that E. V. Hartford has obtained the American agency for the Gobron-Brille automobile.

**Brooklyn, N. Y.**—Among the improvements which will be installed in the new building of the board of health is to be an automobile garage.

**Miami, Fla.**—The Miami Automobile Co., which was incorporated some time ago, has taken the agency for the Reo, Pope-Hartford, and Pope-Tribune.

**Jefferson City, Mo.**—The Van Automobile Co., of St. Louis, has filed a notice of increase of capital stock from \$2,000 to \$10,000, all of which increase has been paid.

**New York**—R. L. Kingston has secured the agency for the coming year for the Hamburg tire, made in Germany. His present headquarters are 141 West Thirty-eighth street.

**Muncie, Ind.**—Numerous claims have been filed against the Carey automobile factory which was recently started by William Carey, the chief being that of the Westerfield Motor Co., of Anderson.

**New York**—Plans have been perfected for a big garage to be erected on upper Broadway for the St. Louis Motor Co. It is said that it will have more floor space than any other motor house in the country.

**New York**—Arthur Severance Winslow, who has been associated with the Cadillac company of New York for the past 3 years, has secured for his own account the agency for Cadillac automobiles for the southern part of Westchester county. He says he will soon open salesrooms and repair shops in Mt. Vernon, New Rochelle, Larchmont, Rye, Portchester, White

Plains, Yonkers and Tarrytown, with headquarters in New Rochelle.

**New York**—Gustave Reno announces he has retired from the firm of Herz & Co., 203-5 Lafayette street.

**New York**—Marshall H. Page, who represented the Oldsmobile company in the far east, has joined the selling staff of the Reo Motor Car Co.

**Kalamazoo, Mich.**—Blood Bros.' Automobile Co. is about to add additional equipment to its factory for the manufacture of automobile parts.

**Lynn, Mass.**—The Essex Automobile Co., agent for Pierce, Ford, and Cleveland cars, has opened an office and salesroom at the Oxford garage, 197 Broad street.

**Grand Rapids, Mich.**—T. H. Jacos, formerly connected with the local branch of the Rambler company, is now associated with Thomas B. Jeffery & Co., of Philadelphia.

**New York**—Charles F. Fox, formerly with the American Storge Co., and C. Ewing Easter, late with the Reo Motor Car Co., are now with the Franklin branch of the Decauville Automobile Co.

**Providence, R. I.**—D. G. Gray, formerly of the Gas Engine and Power Co. of New York, has formed a connection with the American Locomotive Co. as chief engineer of the automobile department.

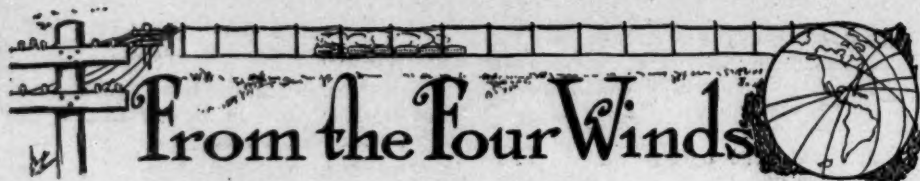
**Memphis, Tenn.**—An automobile garage and repair shop will be opened at 346 Madison street, by Frank C. Bloomberg & Co., who have secured the agency for the Baker electrics, and the White and Thomas.

**Louisville, Ky.**—Prince Wells has been granted a permit for the erection of his proposed garage on Fourth avenue. The structure is to be built of brick at a cost of \$10,000, and will be completed by March 1.

**Wilkesbarre, Pa.**—The new plant of the Matheson Motor Co. is fast nearing completion, and it is expected that the removal from Holyoke will begin next week. The new plant will cost in the neighborhood of \$75,000, and machinery worth \$50,000 will be installed.



CHICAGO RETAIL TRADE MEN'S MEETING AT THE CHICAGO AUTOMOBILE CLUB



LITTLE RUNABOUT USED TO HAUL ROAD ROLLER AT TARRYTOWN, N. Y.

**Costly Exhibit**—It is stated that the Itala exhibit in the Paris show cost the makers \$6,000 and that it was the costliest one of the lot.

**For Amateurs Only**—The powers that be have decided that tradesmen are not wanted in the Herkomer tour and that amateurs only are eligible in the big German competition. It has also been settled that in the next tours the first two punctures will not count, the penalties starting in with the third puncture.

**Pittsburgers Do Good Work**—The American Motor League is pushing the work of erecting danger signals on the highways and expects to have more than 3,000 signs up before the end of 1906. The Pittsburg consulate has been particularly active in this work and many of the roads in western Pennsylvania have been safeguarded in this manner by the energetic motorists of the Smoky city.

**Iowa Enterprise**—The board of directors of the Agricultural Society of Fayette County, at its meeting at West Union, Ia., decided to encourage the building of good roads by offering a premium of \$50 for the best half mile of highway, kept up by abutting owner or owners of land in Fayette county during the season of 1906, \$25 to the best, \$15 for the second and \$10 for the third best, the premium to be determined by a committee which will make the awards at the annual fair in 1906. It is desired that they be on main traveled roads.

**Unexpected Aid**—Douglas H. Hargett recently retired as president of the Maryland State Turnpike Association, at which time he took a shot at the motorists, being backed up by a resolution adopted by the association which pledged itself to use every effort to prevent any change in the automobile law passed by the legislature of 1904 and now in force in Maryland. The Hagerstown Automobile Club put on its war paint when it heard of the resolutions and Harold Pope, representing the Hagerstown factory of the Pope Mfg. Co., wrote a long letter to the daily papers protesting

against the laws. The editors not only printed the letter but editorially took sides with the motorists, showing that motorphobia does not exist in all newspaper offices.

**Elects Officers**—The Hamilton County Automobile Association, of Noblesville, Ind., has elected the following officers: President, Horace Brown; secretary, Dr. S. Harrell; treasurer, Elbert Shirts.

**New Zealand Exposition**—N. A. Neeley, Box 579, Christchurch, New Zealand, writes *MOTOR AGE* concerning the international exhibition to be held in his city, starting November 1 and lasting 6 months. He urges American automobile makers to exhibit and points out a splendid field in the country, which has a population of 900,000. Christchurch has 60,000 inhabitants and only about 100 cars. The people are of a wealthy class and the roads fine.

**Kaiser Is It**—The New York Herald's cable from Berlin tells how Kaiser William has consented to become the patron of the Automobile Club of Germany and that the first step of the emperor was to change the name to the Imperial Automobile Club. This cutting in of William forces the Grand Duchess Anastasia of Mecklenburg-Anastasia, the former patroness, into the background. She now becomes the honorary patroness. The club now has 1,014 members, including twenty-four women. The club will not desist in its fight on the automobile tax despite the emperor being a member.

**Michigan's Ice Meet**—One of the most unique race meets ever held in Michigan will take place in this city at the close of the Chicago automobile show in February. The meet will be on the ice of Muskegon lake, which is nothing less than a harbor of Lake Michigan. The lake is 5 miles long and a cinder path will be made that length and about 48 feet wide. The cinders will be laid while they are hot and will sink into the ice forming a solid track. A silver cup will be offered and other prizes will probably be put up. The local motor cycle club will also participate and motor cycle riders from all over

the state are expected to enter. The races will be unique in the fact that the machines will be speeding over ice which covers a depth of water, amounting in some parts of the lake, to 100 feet.

**Nick Made Famous**—The rubberneck coaches in Washington, D. C., now include in their sightseeing circuit the block in which is located the residence of Congressman Nicholas Longworth, whose engagement to Miss Alice Roosevelt, daughter of the president, was announced recently. It's a bit of notoriety the congressman does not relish, but it is the penalty for getting in the limelight in this manner. It isn't every day the daughter of a president of the United States becomes engaged.

**Paris Show Attendance**—Claim is made that on the first day of the Paris show 160,000 people attended the exhibition, 200,000 free tickets having been given out. The next day when everyone paid the figures fell to 35,000 but the third day went to 54,000. One can imagine the jam when it is understood that the building was full with 30,000 and jammed with 50,000. In preceding shows the attendance was as follows: 1898, 82,000; 1899, 84,000; 1900, 89,000; 1901, 130,000; 1902, 197,000; 1903, 230,000; 1904, 360,000. The figures for the show just ended have not been given out.

**Good Roads in New York**—According to a statement made in Syracuse by Deputy State Engineer E. F. Van Hoesen, of Albany, supervisors of various counties in New York state have approved plans for improving 1,334 miles of highways, the estimated cost of which is between \$12,000,000 and \$13,000,000. The counties have appropriated one-half of the expense and the state will appropriate the other half. The plan is to maintain the roads by taxes on owners of abutting property and by a tax on automobiles. Jefferson county supervisors have passed a law requiring a 3-inch tire on wagons carrying over 1,500 pounds.

**Unique Banquet**—The Hearth Club, one of inner organizations of the famous Union League, of Philadelphia, and composed of the younger element of the organization, addicted to the automobiling habit, held one of its unique entertainments in the big banquet room of the league last Saturday night. The table was set to represent an automobile, with searchlights at one end and tail lights and tags at the farther end. President Herbert Seymour Darlington was at the wheel, the other guests being seated along the running board. The waiters were attired as chauffeurs, with goggles and all the necessary accoutrements. The dinner was interrupted by a company of farmers and constables with warrants for the arrest of the tourists for road-burning. These protestants were soothed, however, with numerous automobile cocktails and gasoline punches, and after having partaken of the good things, and lighting their neverouts, the whole party enjoyed the quips and antics of a minstrel troupe. The affair wound up with numerous responses to toasts, the toastmaster being armed with a powerful honkhonk to bring the guests to order. Everybody was compelled to tell a story of real or supposed adventures en tour. As the



fuel tanks were not filled to the limit, it was not necessary for any of the travelers to get under the body of the long car to make adjustments.

**Austrian Regulations**—Austria's minister of the interior has ruled that in towns the speed limit on automobiles shall be 9 miles an hour and in the country 27 miles an hour. The lower speed also applies to villages.

**Good Roads Branch**—A permanent good roads branch organization has been formed at Paulding, O., the following officers being elected: President, C. H. Jordan; first vice-president, J. K. Price; second vice-president, J. B. Weible; secretary, E. L. Savage; treasurer, D. J. Harkless.

**Prize Muffler**—In the international muffler competition of the Automobile Club of France first prize was awarded to the Clair muffler. Twenty-six devices were offered, effective silence, suppression of resistance and freedom from becoming clogged with dirt being taken into consideration.

**Long List of Complaints**—Peter Bissman, a wealthy wholesale dealer of Mansfield, O., and his automobile have gotten into trouble. A. W. Ackers and his wife, of Crawford county, O., have brought a suit for \$5,000 damages against the Mansfield man, the petition alleging that the horse became frightened when he heard the "loud, whirring, wheezing, puffing,

coughing, chugging, buzzing, clanking, rattling, popping automobile" approaching at the rate of 25 miles per hour. Mr. and Mrs. Ackers were thrown from their buggy, and now lay claim for the amount for injuries sustained.

**Show in Greece**—It is announced that in connection with the Olympian games at Athens, Greece, from April 5 to 12, there will be held a cycle and automobile exhibition. A competition for commercial wagons will be given, the winner not only getting a prize but also a large order for vehicles.

**Runabout Town Roller**—Recently when there was some questions about securing horses to draw the roller used in making a new road at Tarrytown, N. Y., the Maxwell-Briscoe Co. came forward and offered to assist the authorities in completing the desired road. When one of the concern's runabouts was first hitched to the big roller, old-timers were skeptical of the result. The work, however, was done in 2 days by the little machine, and now Tarrytown people believe it is the only way to complete new roads.

**Wise Chief**—Chief of Police Perry D. Knapp, of Toledo, O., has been trying for some time to get the board of public safety, of that city, to do away with the cumbersome, horse-driven patrol wagons and buy wagons driven by gasoline or electricity. Toledo has been having an over share of safe cracking within its

borders during the past month, and in one case—that of the robbery of the barns of the local street car company—the chief argues that had the police been provided with an automobile patrol the gang could have been surrounded and possibly captured while they were in the office and working on the safe.

**Foreign Importations**—Treasury officials estimate the importations of foreign automobiles in this port during the year just closing at approximately 1,036 machines, with an appraised value of \$4,150,000. As in the importation of precious stones New York has a monopoly in the automobile importation. The growth of the importation is demonstrated by the figures of George W. White, appraiser of the port. In 1904, 602 machines, valued at \$2,209,492, were received, and in 1903, 375, valued at \$1,300,000.

**Jervis a Journalist**—January's Everybody's Magazine has for a leader under the happy title of "Car Coming" a brilliant descriptive story of the last Vanderbilt cup race, with some able comments on the value of these contests to American automobile manufacturers. Its author is Arthur N. Jervis, a member of MOTOR AGE staff which covered the race in question, as well as the American trials that preceded it. Jervis pronounces the race as a supreme and most useful test and places it ahead of touring contests in value to the maker.

## THE READERS' CLEARING HOUSE

### DURYEA CLAIMS FIRST

Reading, Pa.—Editor MOTOR AGE—In reply to Victor Christen, in the MOTOR AGE of November 30, page 25, you state it is a disputed point as to who made the first successful automobile and who manufactured it for the market. A little reference to history will show that there need be no doubt about this. A continuous line of Duryea vehicles has been made since the first one was finished in 1892. The first and second events in America—at Chicago in 1895 and New York in 1896—were won by Duryea vehicles, and Duryea vehicles were made in lots of ten at a time during the winter of 1895-1896. Surely this is manufacturing; if there was any other concern making goods in this quantity at this time nobody knows of it. I have no desire to discredit anyone else, but when a man asks for facts I like to give them.—C. E. DURYEA.

### CARBURETER EXPLOSIONS

Reading, Pa.—Editor MOTOR AGE—Please inform me what is the cause of a four-cylinder motor—4½ by 5 inches—firing in the carbureter when running slowly and up to 1,000 revolutions per minute? I set the exhaust ¾ inch before center and close on center, and the inlet to open ½ inch after center and close ¾ inch after center; exhaust valve is fully closed before the inlet starts to open, as there is a distance of 3 inches on the flywheel between the two. I have made both the exhaust and inlet springs stronger, but with no better results. I have filed the inlet and the exhaust stems, so they do not stick in the valve guides. It does not do it very often,

but more so when the carbureter is adjusted and a little shy of gasoline. I have smoothed the cylinders on the head and the inlet and exhaust valves, with no better results. Kindly inform me through the Readers' Clearing House the cause for this trouble.—B. F. F.

Inspect the inlet valve seats, which may be uneven, due to expansion and contraction. If so, reseal the valves by grinding them in with powdered emery and oil. A very minute opening of the seat will cause the explosion to follow up the line of incoming vapor and consequently explode in the carbureter.

### TWO SPARKS AT ONCE

Courtland, Minn.—Editor MOTOR AGE—I am running a two-cylinder Ford car, 10-horsepower 1904 model. It has a Schug coil, made in Detroit, and a two-point cam on camshaft which makes electrical contact. The commutator is made of two red fiber plates with one spring, which touches points of cam as it revolves. Both spark plug wires are connected with the one coil and a spark occur in both cylinders at the same time. This is very hard on the batteries and also on platinum of vibrator and the adjusting screw having platinum point. Would it be advisable to install two good coils, one for each cylinder, and a one-point contact cam to work in a two-spring contact commutator? If this could be made to work I think it would save batteries and be easier on the coils.—W. E. DORR.

A spark should not occur in both cylinders at the same time; this is a waste of current. MOTOR AGE respectfully refers the correspondent to the maker of the car

on this matter; as it undoubtedly would be pleased to take this matter up. The probability is the fault lies in the commutator.

### MR. MUDD MAKES DENIAL

Chicago—Editor MOTOR AGE—The article in your last issue does me injustice, being incorrect and without foundation of fact. I presume it was inspired by recent articles in the Chicago daily press—where I was grossly misquoted and only partially quoted—and by the fiery editorials in the daily press based upon these misquotations from the silly and unreasonable standpoint of a rank motorphobist. Upon my personal protest one of the dailies printing these articles agreed to publish my denial of the statements accredited to me, but I have been unable to find anything of the kind in print. I am no scorcher—he is the cause of all this trouble and should be suppressed—and did not boast of breaking the law nor say I intended to do so again, as I was quoted in the daily press. What I said was that I had admitted to the judge having driven at the rate of 12 miles an hour at the time in question, and I further stated, under oath, that I did not believe I had ever ridden in my automobile or any other automobile from Austin downtown when the speed was, all the way, less than 10 miles an hour, or that anyone else had ever done so; further, that it would be practically impossible for me or any one else to do so in the future; nor did I see any necessity or reason for doing so. As is well known, 90 per cent of the automobile operators drive more than 10 miles an hour every time they ride, hence technically violate the law.—FRANK X. MUDD.

# Current Automobile Patents



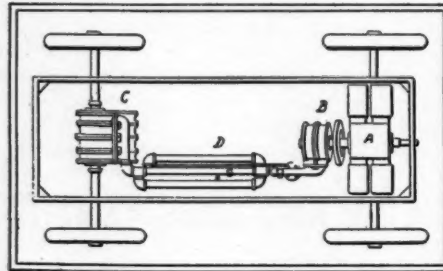
**Fluid-Power Transmission**—No. 806,759, dated December 5; to Hosmer Tuttle, Cedar Rapids, Ia.—On the front axle of the automobile is placed a four-cylinder opposed motor A and on the rear of the crankshaft is a fluid driving motor B, the latter having two casings and unattached rings adapted to run within these casings. Two ports are provided in each casing—upper and lower—with hollow castings from each port, with a stop-cock between them, so that a by-pass is provided. On the rear axle is a fluid-driven motor C connected by the pipings D with the fluid driving motor B. This piping is so disposed that one pipe leads from the driving to the driven motor and another from the driven to the driving motor and the third pipe is used between the two, so that a by-pass is obtained.

**Non-Kick Starting Crank**—No. 806,583, dated December 5; to George B. Selden, Jr., Rochester, N. Y.—In this device three elements combine. One a ratchet face on the end of the crankshaft, the second a similar ratchet face on the starting crank hub and opposing the former, and the third a clutch-part so arranged that with the motor driving ahead, both ratchet faces are locked together, but with the slightest backward movement of the crankshaft the clutch mechanism disengages the ratchet face on the starting crank hub, so that in case of back kick it is not transmitted to the starting crank.

**Expanding Clutch**—No. 808,289, dated December 26; to Alfred Lee, Bellingham, Wash.—This clutch consists of a loose member with an angular flange, and within this is arranged a flange disk, the disk having a radially recessed arm. The disk has a peripheral groove terminating at one end in a stop shoulder and within this groove is a band with one end fitted against the shoulder, and its opposite end extending partly over the recess of the arm. A lever is supported on a pivot within the recess and has its outer end

engaging with a free end of the band. A set screw is carried by the inner end of the lever and a cam pin movable through an opening in the arm serves through its engagement with the set screw to operate the lever.

**Carburetor Control**—No. 806,830, dated December 12; to James W. Packard, Warren, O.—The inventor's mixer and vaporizer comprises a gasoline inlet, a cylindrical casing surrounding this inlet and provided with an outwardly extending flange, a suction valve arranged within the casing and having an apertured section adapted to control the admission of air through ports formed in the casing between the inner end thereof and the



TUTTLE'S FLUID TRANSMISSION SCHEME

annular flange and a hand operated valve for controlling the passage of air through ports formed in the flange.

**Driving Scheme**—No. 806,933, dated December 12; to T. Stafford, Topeka, Kan.—In his driving scheme between the motor, carried in the front end of the automobile, and the differential in the rear axle, the inventor carries the sliding gear set close to the motor and connected therewith through a shaft and universal joint. From the gear case a shaft connects with the differential and this shaft is enclosed in a housing which serves in the capacity of a radius rod for the rear axle.

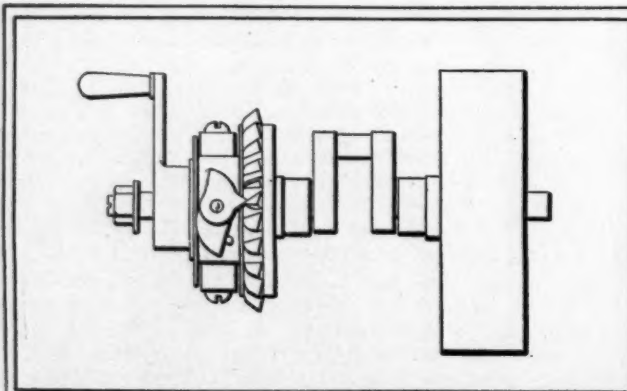
**Simple Automobile Jack**—No. 808,208, dated December 26; to Lee B. Maxwell, Cedar Rapids, Ia.—In this device two track pieces A made the length of the automobile wheel base, or a little longer,

are carried on a pair of base supports B, on which they are pivoted or hinged, so that one end D may rest on the floor of the garage and the opposite end E may be raised. On the end E is a pair of vertical supports C. With the jack in position the automobile is driven upon it from the end D and when the front wheels approach the vertical pieces C the weight on the forward end of the car is sufficient to bring the track pieces A into a horizontal position, with the bottoms of the support C resting on the floor.

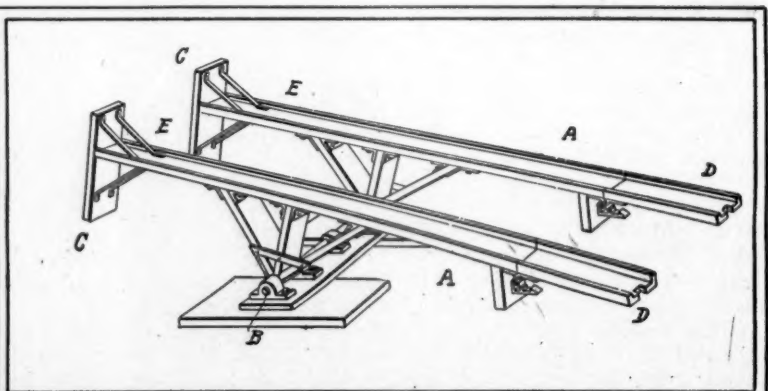
**Front Wheel Drive**—No. 807,156, dated December 26; to William K. Cleveland, St. Petersburg, Fla.—Universal joints are used within the steering knuckles, the axis of the knuckles and that of the joint being in the same vertical line. The front axle is driven by a single chain passing over a sprocket containing a differential. The axle casing terminates at each steering knuckle in a large horseshoe-shaped yoke, to which is pivoted the steering knuckle made in a similar shape. The circular space formed between these two pieces contains the universal joint. The front wheel revolves on a hollow stub axle within which is a drive shaft connected to the universal joint. A jaw clutch connects this drive shaft with the hub of the wheel.

**Chain Tire Protector**—No. 807,167, dated December 12; to Edward B. Hazleton, Sheffield, England—This invention is a pneumatic tire protector composed of a chain-like armor of very fine links, which covers the tread and part of the sides of the tire. From the sides of this armor are short chain triangular projections provided with eye-holes, through which is put an endless wire. The wire is in turn held to the wheel rim by four binding clamps, which connect with the wire on each side of the tire and span the rim of the wheel. In these clamps are adjustment nuts by which the cover can be tightened to any extent on the tire.

**Emergency Automobile Brake**—No. 808,234, dated December 26; to Walter M. Gooch, Dayton, Ky.—The emergency brake referred to acts on the surface of the pneumatic tire on the rear wheels. It is in the form of a long curved piece, the curve practically the same as that of the tire. This piece is pivoted at one end and on the other end carries a rack. A pinion meshing in this rack is operated by pedals on the footboard and by simply pressing the pedal the curved piece is brought in contact with the wheel tire.



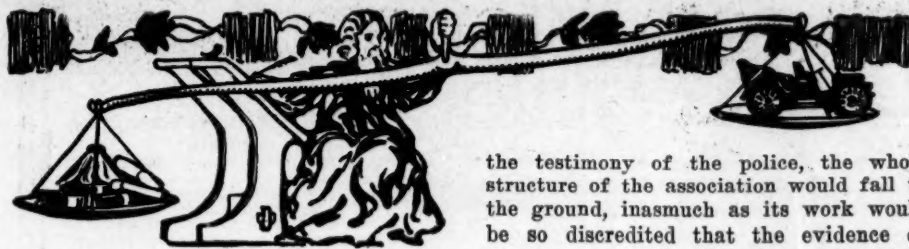
SELDEN'S STARTING CRANK



MAXWELL'S AUTOMOBILE JACK



## LEGAL LIGHTS AND SIDELIGHTS



## BATTLE OF THE TAGS

Attorney Ira J. Williams, representing the Automobile Club of Philadelphia, opened the second round of the license tag fight with the city of Philadelphia on Saturday last by securing from Justice Mitchell, of the Supreme court of Pennsylvania, an order restraining the municipal authorities from issuing automobile licenses until his tribunal has heard the argument in the case. Should the regular procedure be followed, the matter will not come up until the March term. Mr. Williams, however, desirous of a speedy settlement of the case, has petitioned for a hearing during the present month. The first round of the battle resulted in a lead for the city, the injunction asked of common pleas court No. 4 by the automobilists having been refused. Chief Justice Mitchell's order reads as follows: "It is ordered that the appeal heretofore taken shall be a supersedeas, and the respondents and the city of Philadelphia are enjoined from the enforcement of the ordinance of December 26, 1902, pending the appeal."

As matters now stand, Philadelphia automobilists will operate their cars under the provisions of the new state law, which went into effect on New Year's day. Automobilists all over the state have been of the opinion that the common pleas judge will be eventually overruled, and in city and county have been buying state licenses and giving local licenses the go-by. In Philadelphia the bureau of boiler inspection had all the paraphernalia ready for issuing the blue and yellow tags of the municipality; but the supersedeas of Justice Mitchell knocked the calculations of the city officials galley-west. Should the state law finally be decided to be paramount and all that is necessary to keep the Keystone state automobilists in subjection, the city of Philadelphia will stand to lose some \$1,500, the amount expended for the necessary printed matter and tags. The money for the 400 or more city licenses for 1906 already issued will have to be refunded in the event of the ordinance of 1902 being declared null and void.

## BRITISH VICTORY

A matter of great interest to British motorists was decided at the Surrey county assizes at Guildford, where a cyclist scout, who had been employed by the automobile association in order to warn week-end driving motorists of certain police traps on the London-Portsmouth road, was indicted on a charge of committing perjury when giving evidence on behalf of the motorist who had been charged and fined for exceeding the speed limit over the police trap laid on that road some time previously. It was tacitly admitted that if this scout was convicted of perjury on

the testimony of the police, the whole structure of the association would fall to the ground, inasmuch as its work would be so discredited that the evidence of these men would not be accepted, while their liability to be wantonly prosecuted would deter the necessary scouts from fulfilling their duties. And as, during their operation of about 3 months, this association has probably saved London motorists \$2,000 in fines and expenses, the gravity of the case can be seen. Despite an unfavorable charge by the judge to the jury, and an equally unfavorable summing up against the scout, backed by police evidence of the most determined character, luckily contradicted, the scout was acquitted, and there is now some talk of endeavoring to lay the charge of perjury against the police officers whose evidence has been rejected. It was clearly proved by photographs and cross-examination that the evidence upon which the motorist was fined for exceeding the limit was entirely untrustworthy, and, in consequence, the right of appeal against such decisions will be strongly urged when the new motor car act comes up for discussion in the house of commons. At the present time the right of appeal only lies when the automobilist's license is endorsed.

## COLORADOANS TO FIGHT

Members of the Automobile Club of Colorado, at a recent meeting in Denver, decided for the present to give up their opposition to what they considered an effort to impose an unfair tax upon them because they own automobiles, and concentrate every effort upon the passage of a general ordinance covering all vehicles. It is the intention of the club to confer first with the city attorney and later with the board of supervisors and the city council in regard to the ordinance which they wish to pass. A committee, consisting of Dr. F. L. Bartlett, Dr. J. W. O'Connor, Dr. W. H. Bergtold, E. W. Brunton and W. H. Felker, was appointed to take up the matter with the city attorney at an early date.

"We also discussed at length the bicycle cases," said Dr. Bartlett. "There are at the present time several cases against members of the club brought by cyclists who claim to have been injured by the carelessness and reckless driving of operators and as a club we propose to make a rigid investigation of these and all future cases. We are doing everything in our power to eliminate fast driving on the business streets and main thoroughfares of the city and will expel any member of the club who is convicted of reckless driving, but on investigation we find in many instances that accidents are more often caused by the carelessness and fear of pedestrians than by automobiles."

"Rather than go into court many of our members have settled claims made against them by pedestrians and in cases where the automobile driver was entirely

blameless. It is this thing which we propose to stop. We expect to abide by the law, but in the future the Automobile Club of Colorado will stand up for its rights. In the case of George W. Coffin, one of our members who, according to a recent report, was responsible for the injury of a boy, we find that Mr. Coffin's car was not within 20 feet of the boy who became frightened and in his nervousness caught his bicycle in the street car track and fell, breaking his knee cap. The boy has ten witnesses who will take their oath that the accident was caused by the automobile and he has brought suit for \$1,200. Under our late regulations drivers will be required to stop their machines in case of accidents and take the names and addresses of people who witness the accident. In this way we hope to put a stop to the injustice done drivers of cars."

## MOTOR CAR LITERATURE

Perhaps the neatest volumes of road maps yet issued are a set of four, marked A, B, C and D, the first of the Chicago-Milwaukee route, the second Chicago to Rockford and thence to Beloit and Delavan and Geneva lakes, the third Chicago to Lake Geneva and return through Antioch and the Fox lake country and the fourth, Chicago to South Bend by way of Hobart, Valparaiso, LaPorte and New Carlisle. Each volume measures 5 by 8 inches and contains sixty pages of route information. The route information is in the form of half-page photographs of every turn in the route with an arrow on the photograph indicating the direction of the turn. In all sixty or more of such views are given in each volume and beneath each are a few lines of explicit directions concerning distances to the next turn and the nature of the road. One page is devoted to a list of the towns of the route in order as passed through and another page or two contains lists of towns not on the route but adjacent to it, and how each can be reached. The four volumes are well bound in black morocco with gold lettering and have a total thickness of 1 inch. They are sold as a set in a leather case. The publisher is the H. Sargent Michaels Co., 355 Dearborn street, Chicago.

The Gabriel horn, in its latest shapes and sizes, is the subject of an eight-page folder published by its maker, the Gabriel Horn Mfg. Co., Cleveland. Two, three and four-pipe horns are shown, as well as others intended for motor boats. The musical horn, an eight-pipe device, which is operated from as many pull buttons at the side of the driver's seat, is also shown. It is a regular chime contrivance.

The Kellogg double-acting pump, made by the Wray Pump & Register Co., Rochester, N. Y., is the subject of a twenty-page catalogue in which are given sectional views showing how the pump is made with reference letters included, and with these are many other illustrations of the different styles of pumps made and the capacity and price of each.

The Lea speedistimeter is well played up in a new catalogue by its makers, the Motor Car Specialty Co., Trenton, N. J. The usual specifications and illustrations are given in the pamphlet.

# American Motor League

**OFFICERS**

**ISAAC B. POTTER**, President,  
Potter Building, New York.

**CHARLES E. DURYEA**, First Vice-  
Pres., Reading, Pa.

**JOHN A. HAWKINS**, Second Vice-  
President, Pittsburg, Pa.

**FRANK A. EGAN**, Secretary,  
132 Nassau St., New York.

**FREDERICK B. HILL**, Treasurer,  
32 Bimford St., Boston.

**National Headquarters**  
Vanderbilt Building, New York



**THIS LEAGUE**  
Is Now Collecting Route Infor-  
mation

covering all automobile routes in the important states and will publish road books for motor car users as fast as complete information is received. The A. M. L. is the only organization engaged in this work, and it invites the co-operation of all persons interested. For full information and membership blanks address American Motor League, Vanderbilt Building, New York City.

## REDUCED FARES TO SHOWS

More than 100 inquiries were received by the secretary last week from persons who want information on this subject. The secretary cannot and will not undertake to send a personal reply to each of these letters. He therefore sends to every inquirer a printed slip containing full information and this must suffice. Many of our friends will not read these slips, but they would better. It will save no end of misunderstanding and probably some delay.

## HOW TO AVOID DELAY

When you reach New York or Chicago, go, as soon as convenient, to the secretary and leave your railroad certificate in his possession, presenting your membership card at the same time. If your card has been lost or your renewal fee is due, pay your dues and leave your name and address so that the proper entry may be made and the certificate validated by the secretary and railway agent. When you return at a later hour you need only ask for your certificate and it will be given you without delay. The secretary and agent will both be in attendance during the entire week from 9 a. m. till 6 p. m. each day.

## HOW TO GET RATES

The league has extended a general invitation to all motor car users to attend its meetings at New York and Chicago during show weeks, but only league members will receive the benefit of these reduced rates. It is therefore necessary to observe the following:

### IMPORTANT CONDITIONS:

1. If you are not a member of the American Motor League send your name and address, plainly written, with one year's dues—\$2—to American Motor League, Vanderbilt building, New York, N. Y. If your membership has expired, renew it by sending same amount to same address. Only members and persons who shall at once become members of the A. M. L. will receive the benefit of this reduced rate.
2. Purchase a first class ticket to New York at the regular rate and, at the same time, inform the ticket agent that you are going to the American Motor League meeting and that you want a certificate. If you cannot procure a through ticket from your starting point, get a ticket at the most convenient point at which a through ticket can be had, and there repurchase through to New York, procuring a proper certificate from each agent from whom a

ticket is bought and present all the certificates to the special agent at the meeting.

3. Tickets to New York under this arrangement may be purchased not earlier than Thursday, January 11, nor later than Wednesday, January 17, but tickets purchased between these dates—being first class tickets—may be used at any time during the meetings.

4. Tickets for the return journey will be sold by the ticket agents at New York at one-third the regular fare to those persons only who hold proper certificates countersigned by an officer of the American Motor League, and by the special agent of the railway association, both of whom will be in attendance from Monday till Saturday—January 15 to 20, 1906—both days inclusive. All certificates must be presented to the agent on one of these dates.

5. Return tickets may be purchased at the reduced rate up to and including Wednesday, January 24.

6. These reduced fares are granted only in case the going—one way—fare is at least 75 cents.

7. To prevent delay you should apply for your ticket and certificate—when leaving home—at least 30 minutes before train time and all certificates should be presented to the ticket agents for return tickets at least 40 minutes before the departure of trains on which return trips are to be made.

8. Certificates and tickets issued under this arrangement are not transferable.

9. The place of meeting—where certificates will be endorsed—will be convenient to the shows and full information will be posted in the show buildings

## BRING MEMBERSHIP CARD

Every half hour during show week at New York—and, of course, at Chicago—an excited man will rush to the secretary's table and introduce himself in fashion like this: "Nawful hurry; got to catch the 4:20 train; just sign my certificate quick, so I can get my reduced rate; membership card, did you say? Oh, yes; can't find it; must have left it at home; you'll find my name on the record, all right; must be in the books; Jones—Jones, of Kalamazoo; don't remember the number; eighty-nine hundred and something,—or maybe ninety-eight hundred and something, I never could remember numbers; joined the league in June or July—2 years ago." Then the secretary begins his search and says things to himself while the impatient Mr. Jones waits; but the 4:20 train does not wait and Mr. Jones puts off his time of departure. All of which could have been avoided by a little forethought on the part of Mr. Jones. There is really but one way to handle this matter of reduced fares in a smooth and agreeable manner.

## THE CHICAGO MEETING

The foregoing directions apply to the meeting at New York. An adjourned convention of the league will be held at Chicago during show week—February 3 to 10, 1906—and similar conditions will be announced. The Central Passenger Association has notified the secretary that this concession has been granted for the Chicago meeting and similar notice is expected from the other railway associations within the next few days.

## JOINING THE LEAGUE

There is no initiation fee. The annual dues are nominal—\$2—in advance. The league has passed the perils of babyhood and its usefulness is now being demonstrated. It invites and deserves the membership of every self-respecting user of a motor car in America. The secretary will gladly send further information on request. Address American Motor League, Vanderbilt building, New York.

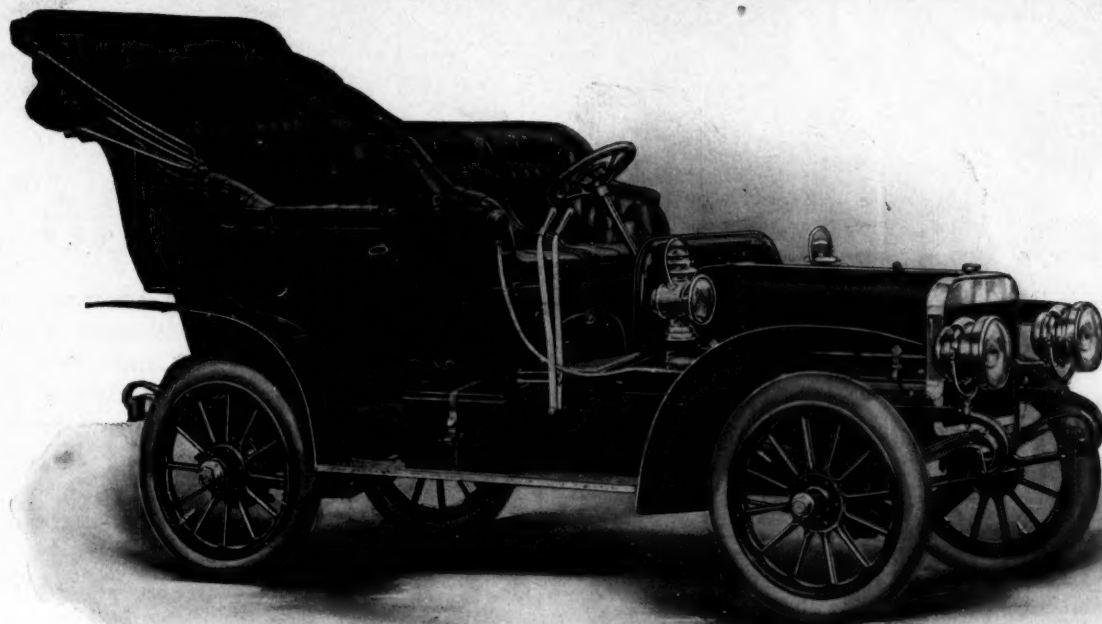
## "ROADSIDE TROUBLES"

The work of putting these chapters in book form proceeds rapidly and unless unexpected delay occurs "Roadside Troubles" will be in the hands of our members within the next 3 weeks. The book with its twenty chapters is replete from cover to cover with valuable information on motoring. The matter prepared by Charles E. Duryea, the pioneer motorist of America, is up-to-date in every particular.





# WINTON MODEL-K



## Get Started Right

• Ever hear of a man selling a good, big car and buying a cheaper one instead?

But you know of many who have disposed of their cheap cars and bought better ones.

So the tendency is all one way. All the experienced motorists (who have had cheap cars) seem to be doing the same thing.

And there's the best of reasons for it.

The cheap car isn't cheap at all. It only looks cheap.

The cheap car is an expensive proposition before you get through with it.

Ask any one of experience about his repair bills, his delays on the road, his agonies in hill climbing, his humiliation

over limited passenger capacity, under-powered motor, cheap materials, etc., etc.

And benefit by his experience—START RIGHT.

Why waste your first season's enjoyment and a wad of money?

Buy a good car FIRST. It's just as easy to run, it doesn't make you sorry every time you try to use it, and it costs many, many dollars less in use, for repairs, and so on.

Besides, a good car, like the WINTON MODEL K, gives you a prestige and an enjoyment that a cheap car never could and never will.

The WINTON MODEL K costs \$2,500 new, and you are done paying for it then.

Tested materials; ground cylinders, pistons and bearings; the "Shooting" oiler; ignition that starts the motor from the seat; velvety, non-jar, non-breakable transmission; patented and exclusive Twin springs and Pneumatic governor; a car of dashing style—these are the things that make the WINTON MODEL K worth \$3,500 or more.

Yet we sell it at \$2,500, because with our perfected manufacturing methods we can do so at a profit.

When you investigate the WINTON MODEL K—at the New York show or elsewhere—you'll agree that it is all that a good car should be.

Volume 2 of "Automobiles Dissected" (free on request) gives the inside facts.

## The Winton Motor Carriage Co.

### CLEVELAND, O., U. S. A.

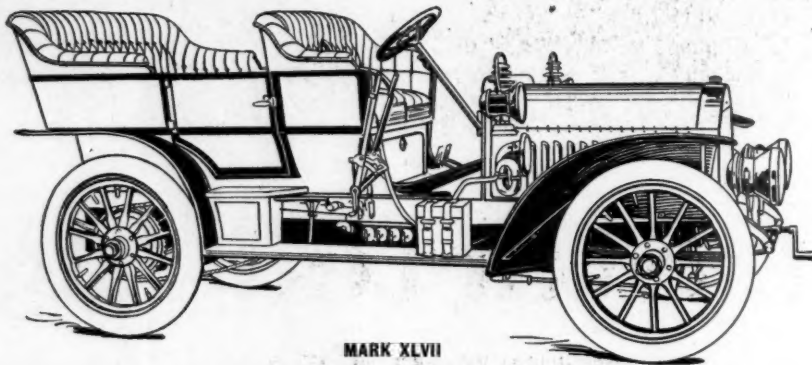
MEMBER A. L. A. M.

We shall exhibit in New York at the Madison Square Garden Show ONLY, Jan. 13-20, 1906

# Columbia

## Gasoline Cars for 1906

ARE built of the best materials in the world under methods and processes more advanced than those employed in any automobile factory other than our own. No consideration of the cost of production has been permitted to interfere with making perfect every part and piece of each model, whether pertaining to mechanism, bodywork or general equipment. The expense of making the crankshafts, for instance, is six times greater than that of any previously made in this country. We guarantee that these cars, each according to its power and place, will yield the greatest things possible in motor service.



MARK XLVII

### MARK XLVII

40-45 h.p. four-cylinder motor under forward bonnet; sliding gear transmission, four speeds and one reverse; jump spark ignition from storage battery; new pattern automatic carburetor; special chrome-nickel steel gears, axles, crankshaft and jackshaft; crankshaft machined cold out of solid block; double chain drive; I-beam front axle forged in one piece; pressed steel frame; 1 8-inch wheel base; seat starting; new pattern brakes. Price, with standard body.....\$4,500  
With 112-inch wheel base, Royal Victoria, Double Victoria, Limousine or Landaulet body.....\$5,000 to \$5,500

### MARK X'VI

An entirely new model. 24-28 h.p. four-cylinder, vertical water-cooled motor; shaft drive, sliding gear transmission; three speeds and reverse; low tension make and break magneto current ignition; special chrome-nickel steel gears and shafts, crankshaft machined cold out of solid block; I-beam front axle forged in one piece; rotary pump oil lubrication; pressed steel frame, 96-inch wheel base; double side entrance body seating five passengers. Price.....\$3,000

### MARK XLIV-2

Perpetuating Mark XLIV, one of the most successful of medium-weight 1905 cars. 18 h.p. double opposed horizontal motor under forward bonnet; frame length increased eight inches, giving ample room forward of each seat; wheel base increased to 90 1/2 inches. Rear seat widened five inches; double side entrance body. An ideal family car, which will climb any hill and maintain a speed of 35 miles an hour on the level. Price.....\$1,750

## Columbia Electric Carriages

Victoria Phaetons, Runabouts, Broughams, Landaulets  
Hansoms, Surreys, Delivery Wagons, Trucks.

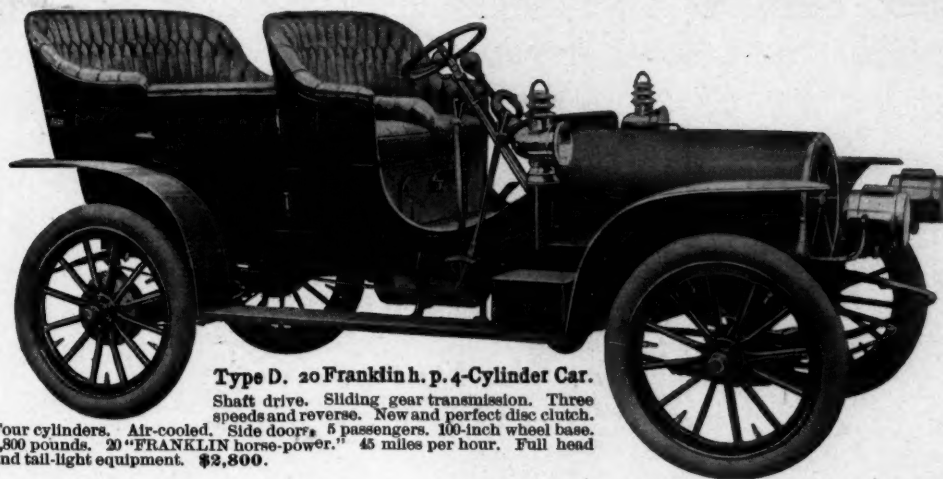
Separate catalogues of Columbia Gasoline Cars, Columbia Electric Carriages and Columbia Electric Commercial Vehicles will be sent on request

## ELECTRIC VEHICLE COMPANY, HARTFORD, CONN.

New York Branch: 134-136-138 West 39th St. Chicago Branch: 1332-1334 Michigan Ave. Boston: Columbia Motor Vehicle Co., 74-76-78 Stanhope St. Philadelphia: Pennsylvania Electric Vehicle Co., 250 North Broad St. Washington: Washington E. V. Transportation Co., 15th St. and Ohio Ave. Paris: A. Bianchi, 194 Boulevard Malesherbes.  
Member Association of Licensed Auto Mfrs.



# FRANKLIN



**Type D. 20 Franklin h. p. 4-Cylinder Car.**  
 Shaft drive. Sliding gear transmission. Three speeds and reverse. New and perfect disc clutch. Four cylinders. Air-cooled. Side doors. 6 passengers. 100-inch wheel base. 1,800 pounds. 20 "FRANKLIN horse-power." 45 miles per hour. Full head and tail-light equipment. \$2,800.

There is no comparison to be made between this and any other car of its rating or price. It has all the ability of any 30 horsepower car of any kind of "going" and for American touring purposes has all the ability of any car built anywhere; no matter what its power or price.

Because of its flexible sills, four full-elliptic springs and perfect cooling maintains its speed indefinitely, even over rough and hilly roads, with perfect comfort and safety.

It is a big car in carrying capacity, roominess, strength and style in everything but useless weight. Ordinary cars of equal ability weigh 2,500 pounds. Type D weighs only 1,800. Any motorist knows what a difference this means in operating and repair expense, especially tire cost.

Type D is particularly noticeable for its clean-cut elegance and freedom from overdesigned appearance noticeable even in many higher priced cars.

## Why do people buy Franklin cars?

They are not cheap cars, for their size and weight.

They are not cheap for their power-rating.

They are not cheap for their nominal classification.

Yet people keep on buying them—bought fifteen times as many their second year as in their first; bought nearly forty times as many the third year; and nearly a hundred times as many the next—that was last year.

People must feel that they are getting good value. They must find some unusual qualities in Franklin cars which put their ability on an entirely different footing from that of other cars in proportion to size, weight, rating and price.

And this is so.

The grade of materials selected, and the workmanship, design and engineering refinements adopted in Franklin cars are all carefully calculated for one end, and they accomplish that end: The delivery of real road power to the Franklin rear wheels. Power that is not lost in the motor; retarded in the transmit-

ting mechanism; jolted out in bad roads; nor handicapped with heavy plumbing apparatus.

Power that is transformed into a ready available road ability at least fifty per cent greater than that furnished by any engine of similar rating in any other car.

The fact is that "Franklin horsepower" is at a premium on the market. It is "way above par" and rising every day. People have learned that it means more than it says.

That may not be good advertising in print; but it is the best kind of advertising after all.

It makes people buy Franklin cars.

Four-cylinder Runabout.  
 Four-cylinder Light Touring Car.

Four-cylinder Touring Car.  
 Six-Cylinder Touring Car.

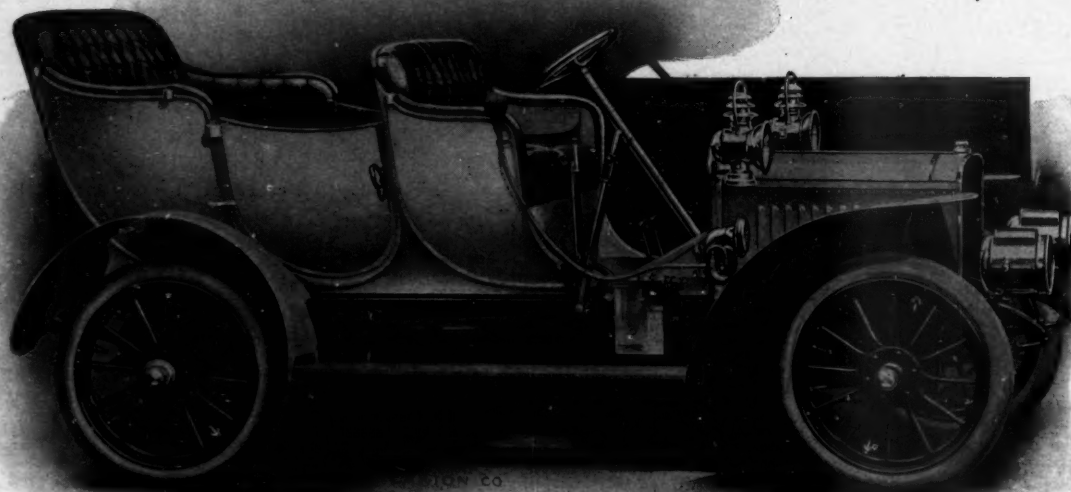
We exhibit at Madison Square Garden, New York, January 13-20, 1906

**H. H. FRANKLIN MFG. CO., - Syracuse, N. Y.**

Member Association Licensed Automobile Manufacturers.

THE NEW MODEL F--30-35 H. P.

# Cleveland



**Is Now Ready for Immediate Delivery. Price \$3,500 to \$5,000, Depending Upon Body Equipment. Five to Fifty Miles an Hour on the Third Speed.**

## SPECIFICATIONS:

**ENGINE**—30-35 H.P., 4-cylinder, water cooled.  
**IGNITION**—Simms-Bosch low tension Magneto make and break spark.  
**TRANSMISSION**—Sliding train, 3 speeds forward and one reverse.  
**REAR AXLE**—Shaft drive, clutch driven hub. Ball bearings.  
**FRONT AXLE**—I-Beam Section. Ball bearings.  
**FRAME**—Cold rolled pressed steel, aluminum under bonnet covering entire engine and transmission.  
**WHEEL BASE**—104 inches.  
**WHEELS**—Imperial whalebone, grade A second growth hickory.  
**TIRES**—34 x 4.  
**VALVES**—Mechanically operated, inlet and exhaust interchangeable.  
**CARBURETER**—Float feed, requiring no adjustment.  
**BRAKES**—Two internal expansion, dust protected, operating on rear hubs through emergency lever, holding either forward or backward. Foot brake operates on propeller shaft. Both brakes bronze against steel.  
**BODY**—Standard Victoria as shown above, or double phaeton, tulip side entrance.  
**EQUIPMENT**—Two head lights, 1 generator, 2 side lights, 1 rear light, 1 horn and tools.

## The Buyer of a Model F

Cleveland can safely eliminate the cost of repairs as a factor. Its economy is a tangible asset, due to harmony of strength, design and construction.

The repairs on fifty 1905 cars in constant use averaged \$4.00, including time.

One Boston car ran 6,000 miles at a repair expense of \$3.90.

One New York car ran 9,000 miles at a repair expense of \$6.00—\$4.00 of which was for spark plugs.

The CLEVELAND has real, solid, tested, standing-up ability. The complete chassis is made by the Garford Company—the largest manufacturers of exclusively high grade automobile parts and chassis in America. It has no weak spots; we guarantee you against them. Price \$3,500 to \$5,000, depending upon body equipment.

The ignition is by the imported Simms-Bosch low tension Magneto, with which all important foreign cars are equipped. The spark is make and break and controlled by the speed of the engine—doing away with spark plug coils, intricate wiring and batteries. This ignition was used on the first seven cars in the last Gordon-Bennett Cup Race.

The carbureter is automatic and requires no adjustment. It will not flood. The exhaust on the muffler prevents dust from coming in the rear of the car. Weight, 2,300 lbs. equipped for the road.

## Cleveland Motor Car Company, Dept. 5, Cleveland, Ohio

NEW YORK: E. B. GALLAHER, 228 W. 58th St., General Eastern Distributing Agent.

SOUTH CALIFORNIA: A. F. WORTHINGTON, Los Angeles.

BOSTON: BUTLER MOTOR CAR CO., 998 Boylston St.

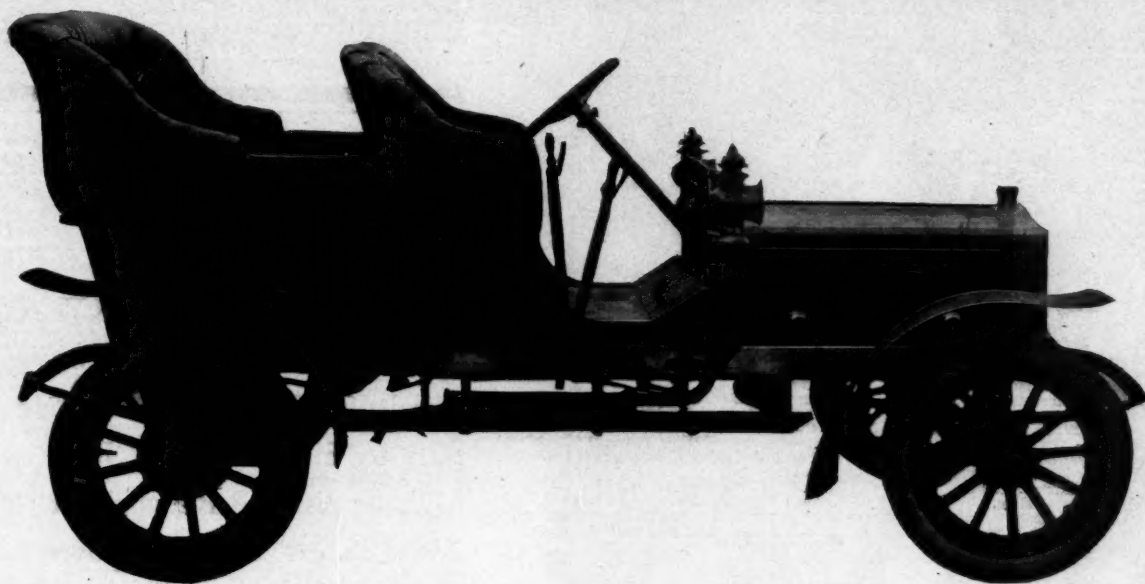
New York Automobile Show, 69th Regiment Armory, space E-2

Chicago Show, 1st Regiment Armory, space A-25 and 26



# MITCHELL

"The Car You Ought to Have, at the Price You Ought to Pay"



**Model D-4**

**\$1,800**

**24-30 H.P.**

MOTOR— $4\frac{1}{4}$  x 5 inches; 4 cylinder vertical.

TRANSMISSION—Slide Gear, 3 forward, 1 reverse, direct drive on high speed with no gears in mesh.

WHEEL BASE—100 inches.

TREAD—56 inches.

WHEELS—32-inch artillery.

TIRES—4-inch.

STEERING GEAR—Irreversible.

CONTROL—Spark and Throttle.

DRIVE—Bevel gear, shaft drive.

LUBRICATION—Mechanical.

CARBURETER—Float Feed.

RADIATOR—Cellular, with fan.

SPRINGS—40-inch, half elliptic.

FINISH—Blue body and gear.

SPEED—40 miles per hour.

BRAKES—Foot and hand emergency.

EQUIPMENT—Side lamps and complete set of tools.

¶ A car for the buyer who desires something finer and more luxurious than can be given at the price of our \$1,500 Model B-4.

¶ In this car the engine is larger, the body more roomy, the upholstering of the *best possible quality*, and each detail worked out to the *highest degree of perfection*.

¶ This model will bear the most careful scrutinizing from every point of view and compares favorably with the highest priced cars.

No car at any price can be more perfectly constructed or better finished.

¶ Five models in all comprise our 1906 line as follows:—2-cylinder Runabout, 4-cylinder Runabout, 4-cylinder Touring car, (Model B-4) 4-cylinder Touring car (herewith shown), and the famous Mitchell commercial delivery car.

¶ Send ten cents for Art Catalogue—the handsomest ever published.

**MITCHELL MOTOR CAR CO. - Racine, Wisconsin**

Members American Motor Car Manufacturers' Association

On another page of this issue appears a Correction of the error made in this adv. last week.

When Writing to Advertisers, Please Mention Motor Age.

# SEE THE DORRIS CAR



PRICE—\$2,500, ready for the road.  
HORSE POWER—30 actual.  
MOTOR—4-cylinder vertical, 4 1/4 x 5.  
VALVES—In head and interchangeable.  
CYLINDERS—Ground.  
CLUTCH—Multiple disc running in oil.  
FLY WHEEL—22-inch with fan.  
PUMP—Gear driven.  
SPRINGS—Semi-elliptic in front, platform in rear.  
RADIATOR—Large finned, tube variety.  
STEERING GEAR—Rack and pinion.  
CONTROL—On steering column.  
DASH—Hollow pressed steel.  
WHEEL BASE—101 inches.  
CAM SHAFT—One piece.  
CARBURETOR—Float feed variety.

IGNITION—Jump spark by storage battery and dry cells.  
OILER—Mechanical and individual feeder.  
FRONT AXLE—I-beam Timken roller bearing.  
REAR AXLE—Bevel gear Timken roller bearing.  
WHEELS—1 1/2 inch second growth hickory.  
TIRES—32 x 4, any standard make, including Continentals.  
TRANSMISSION—Sliding gear, nickel steel hardened; three speeds forward and one reverse.  
BRAKES—Three very powerful.  
LAMPS—Two gas, two side and large tail.  
BODY—Very stylish, made in our own factory, comfortably seating five.  
WEIGHT—2,200 lbs.

AT

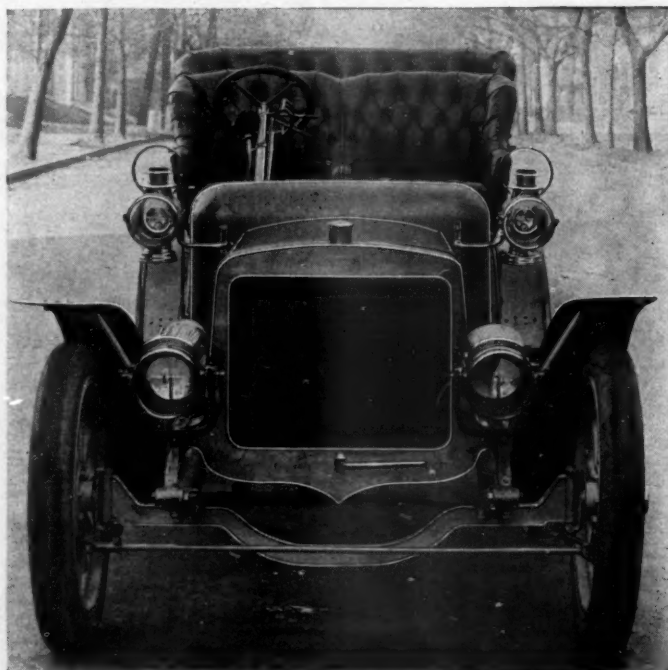
New York Show . 69th Armory  
Chicago . . . Coliseum

¶ In designing the Dorris Car it was our purpose to build a car that will answer equally well for CITY running and COUNTRY touring, a car that is easy of control, the speed of which can be varied from four to fifty miles an hour on the high or direct drive without shifting levers, a car that is a powerful and

steady hill climber, not too heavy in weight, MODERATE IN PRICE, and to have at the same time reliability and endurance.

¶ This car we have been able to produce through the knowledge and experience of our Vice-President and General Manager, Mr. G. P. Dorris. We have tried them out over all kinds of roads, and know we have a car that will give you satisfaction.

¶ We will exhibit at the New York (69th Armory) and Chicago Shows and invite a careful inspection of this car and its parts and will also be prepared to demonstrate there.



## AGENTS

A few territories still open and we will be pleased to hear from representative dealers.

**DORRIS MOTOR CAR COMPANY**  
1211-17 Vandeventer Ave., St. Louis Mo.



# Peace of Mind

No one can place a cash value on Peace of Mind, but when your opinions as to what an ideal automobile should be are analyzed, the thing you most desire about your automobile is that it will do its work with least disturbance to your peace of mind.

If your machine is a "Tire eater," apt to hang you up on the road almost any moment, there is no special pleasure in using it.

And repairs, too,—you can't tell us that it doesn't disturb your peace of mind a lot to find a repair bill in your mail every few days—don't you get to hate the sight of the repair man's name on the envelope?

It isn't entirely the cost of the tires or the repairs either,—it's the doubt as to whether you can plan a trip now for some day next week with any certainty that your car won't be in the repair shop at that time; or, if not this, it's the ever-present question as to how many hours or minutes early you ought to start in order to allow for potential tire and mechanical troubles,—it's this uncertainty, this lack of confidence that destroys your Peace of Mind.

Some of us have bought foreign cars and paid several thousand dollars' duty, although the foreign car was no more comfortable and no more powerful, and lots noisier, but we paid the price solely for peace of mind.

Now the chief thing you buy when you get a Stevens-Duryea is just this peace of mind. You get a car that has established a record for freedom from tire trouble, freedom from mechanical trouble and freedom from the need of frequent overhauling such as cannot be bought in any other car at any price. Freedom from troubles of this sort means certainty of operation,—certainty of operation brings peace of mind.

The certainty of operation of the Stevens-Duryea results from a new method of construction which is thoroughly explained in our booklet. Let us emphasize the statement that it is a better design rather than better material or workmanship that makes the Stevens-Duryea what it is.

**J. STEVENS ARMS & TOOL CO.**  
**705 Main Street    ::    Chicopee Falls, Mass.**

**Members A. L. A. M.**

# WAY'S MUFFLER

PAT. NOV. 16 and 30, 1897

WHICH WAY  
DO YOU WANT IT?



An ideal garment for men, women and children.

Most dealers carry Way's Muffler in stock.

If yours don't, write to us direct.

THIS IS THE WAY  
YOU WANT IT



**Either  
Protect  
Your  
Throat**

from draughts, discomfort, cold, illness and pneumonia with Way's Muffler—or stay indoors.

**WAY'S  
Muffler**

is a perfect throat and chest protector.

Comes with or without ear tabs as preferred.

Especially adaptable for winter motoring.

As easy to put on as your hat.

**The Way Muffler Co.**

MANUFACTURERS

Cor. 23d and Arch Streets **J. HOWARD WAY, Prop.**  
PHILADELPHIA, PA.

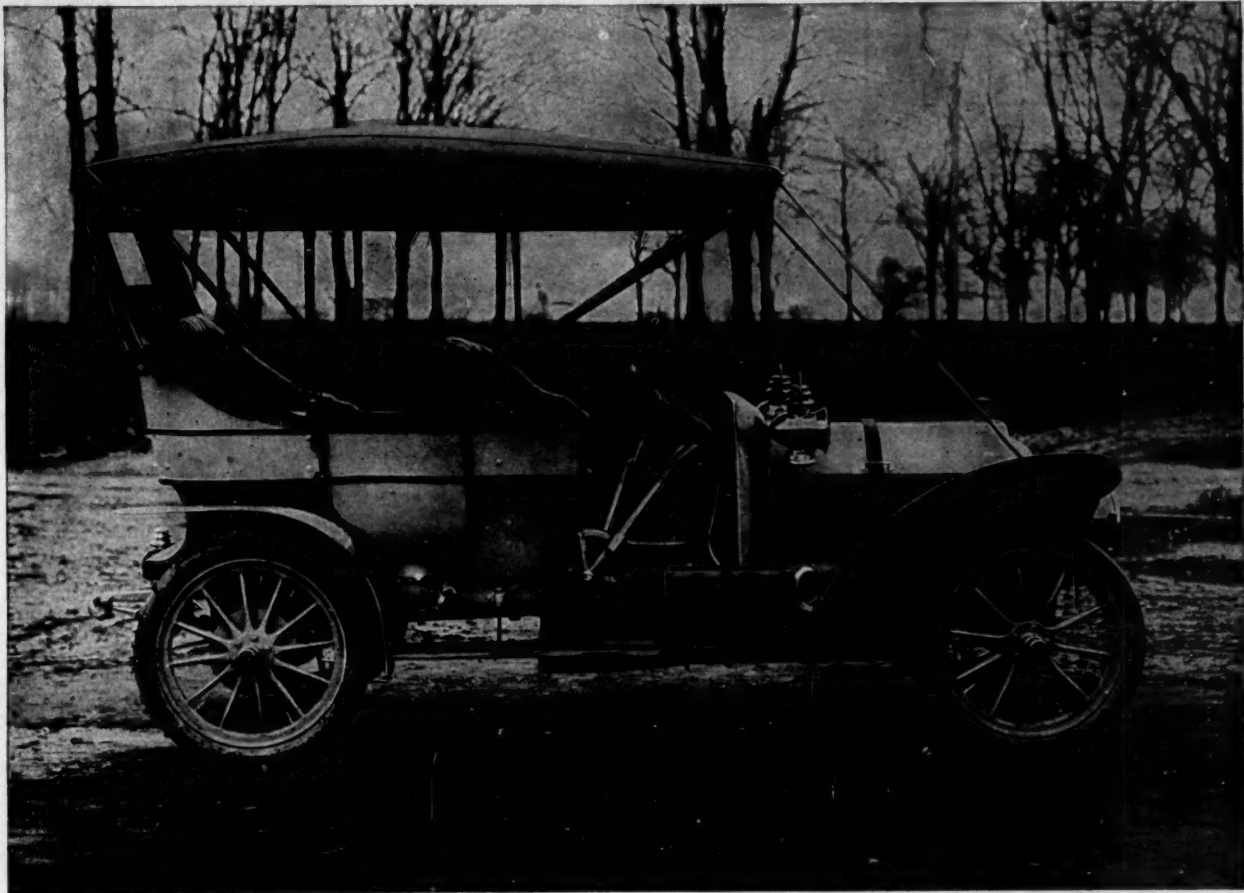
Chicago, 220 Medinah Temple  
Pittsburg, 9th and Liberty Sts.

New York, 43 Leonard St.  
Cincinnati, 21 W. 3rd St.  
London, Canada, Hiscox Bldg.

MOTOR AGE



# OLDSMOBILE



## The Palace Touring Car, Model "S" Price \$2250.00

**If you want STYLE**—you have it in Model "S," the latest and most approved European theories and designs, thoroughly adapted to American requirements. The front door, first introduced by us, keeps out cold, dust, and adds to the finished appearance of the car.

**If you want SPEED**—you have it in Model "S," surplus power for hill climbing and difficult roads, and all the "legs" you can possibly use.

**If you want STABILITY**—you have it in Model "S," high grade material, careful workmanship and every part thoroughly inspected and tested to do its work and do it right.

**That's Model "S"—STYLE, SPEED, STABILITY**

We will exhibit at the Madison Square Automobile Show only, January 15-20

**OLDS MOTOR WORKS, Member A. L. A. M. Lansing, Mich., U. S. A.**

CUT COUPON HERE  
CATALOGUE COUPON

**OLDS MOTOR WORKS**  
LANSING, MICH.

Kindly send me information regarding cars checked.  
I am interested.

Model B.... Delivery Cars....  
16 Model S.... Passenger  
Model L.... Traffic Cars....

Name \_\_\_\_\_  
Address \_\_\_\_\_

CUT COUPON HERE  
CALENDAR COUPON

**OLDS MOTOR WORKS**  
LANSING, MICH.

Enclosed find 10 cents, for which send your Art  
Calendar (free from advertising, and suitable for fram-  
ing) for 1906. Design by Geo. C. Folsom. 16

Name \_\_\_\_\_  
Address \_\_\_\_\_

CUT COUPON HERE  
MOTOR TALK COUPON

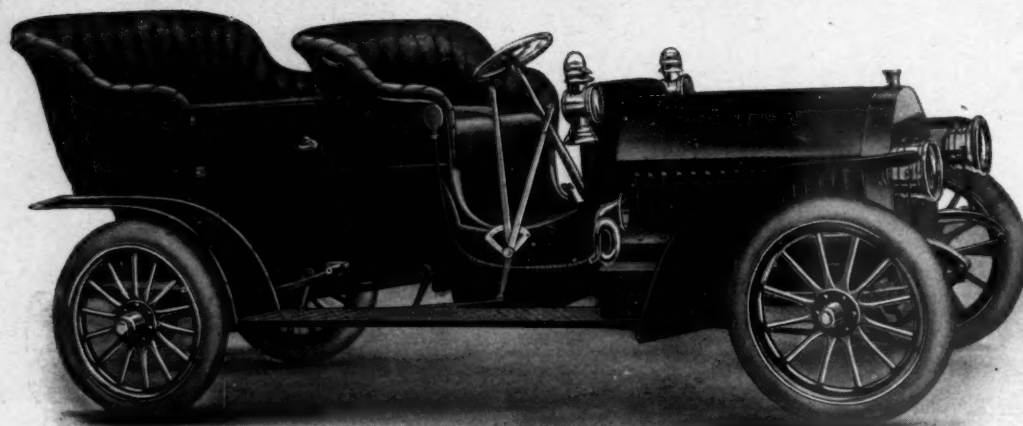
**OLDS MOTOR WORKS**  
LANSING, MICH.

Enclosed find 25 cents, for which have **MOTOR**  
**TALK**, a magazine devoted to automobiling, sent to  
me for 1 year. 16

Name \_\_\_\_\_  
Address \_\_\_\_\_

# Wayne

## One of Our 1906 Models



### Model F \$3500.00.

MOTOR, 4 cylinder, vertical cylinders, 5½x5, cast in pairs. Cylinders and pistons ground. Engine develops by brake test 50 H. P. Water Cooled. IGNITION, jump spark with quad coil and storage battery. TRANSMISSION, sliding gear, with three speeds forward and reverse. Hess-Bright ball bearings throughout. REAR AXLE, shaft drive, floating type. FRONT AXLE, I beam drop forged one piece, nickel steel. WHEEL BASE, 114 inches. TIRES, 34x4½. EQUIPMENT, includes all necessary tools of the best quality, 2 side lamps, 2 acetylene head lights, with generator tail lamp and tube horn.

**Model K** 4-cylinder, five-passenger touring car. 35 H. P. Sliding gear transmission. Price, \$2,500.

**Model B** 4-cylinder, five-passenger car. 24-28 H. P. Sliding gear transmission. Price, \$2,000.

**Model C** Five-passenger car. Double opposed motor. 20 H. P. Planetary transmission. Price, \$1,250.

**Model H** Two-passenger runabout. Double opposed motor under hood. Direct drive. 14 H. P. Price, \$800.

The Wayne Agent can supply a high-grade car at any price his customer may demand.

**We have the BEST**—Car for the Customer  
—Proposition for the Agent

Write for Agency arrangements and descriptive matter, if you can't wait till the Shows.  
New York and Chicago Shows, of course; 69th Regiment Armory, New York

**WAYNE AUTOMOBILE COMPANY**

DETROIT, MICHIGAN



# ANNOUNCEMENT

Messrs. Hollander and Tangeman beg to announce that they have leased for ten years the modern fireproof building at the corner of *56th Street and Broadway*, which will be the future American home of

# FIAT AUTOMOBILES

The building is being especially equipped for them, and they expect to take possession the early part of January.

It is planned to incorporate a new Company to be known as

## The HOL-TAN Co.

which will succeed to the Hollander and Tangeman business.

This is merely a change of name, not of interests. The President of the company will be Mr. C. H. Tangeman; the Vice-President and Treasurer, Mr. E. R. Hollander; and the Secretary, Mr. A. G. Hamilton.

Last year it was impossible for Hollander and Tangeman to meet the demand for "*Fiat*" Automobiles in this country. Arrangements have been made whereby deliveries during 1906 will be greatly increased, and it is the intention to have on hand at all times the various types of the famous "*Fiat*" cars, ready for the road when purchased. Until removal they invite inspection of "*Fiat*" cars at our old quarters.

## 3 AND 5 WEST 45TH STREET, NEW YORK

SOLE AMERICAN AGENTS

LICENSED IMPORTERS UNDER SELDEN PATENT

HARRY FOSDICK CO., Boston, Mass.

ROCHESTER AUTOMOBILE CO., Rochester, New York.

### AGENCIES:

DOMINION AUTOMOBILE CO., Toronto and Montreal, Canada.

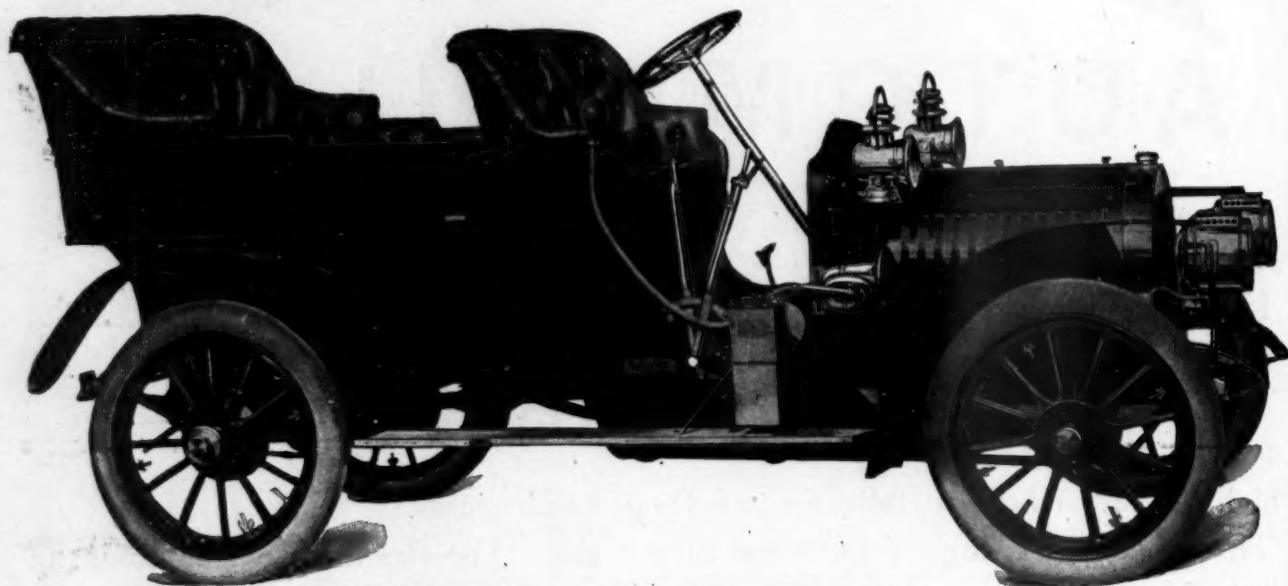
H. ALLEN DALLEY, Philadelphia, Pa.

*"FIAT" cars will be exhibited only at Madison Square Garden Automobile Show*

# THE 1906 MODEL B Rainier

**"THE PULLMAN OF AUTOMOBILES"**

Absolutely the highest grade motor car built in this country, bar none, and the only car that can consistently compete with foreign machines. You will do yourself an injustice if you decide on your car without investigating this triumphant American production. New style make and break spark. Simms-Bosch Magneto, bevel gear drive. Very large and roomy, full aluminum bodies.



**MODEL B RAINIER, 30-35 H. P. PRICE, \$4,000.**

**Guaranteed free of repairs for one year**

Do you realize fully the great superiority of the "make and break" over the jump spark?  
Do you know that it does away entirely with the coil, the commutator, the batteries, and the spark plugs, and substitutes for all these a simple hammer and anvil, mechanically operated, which cannot get out of order?

Do you know that 90 per cent. of the foreign makers have already adopted this method?

Do you know that the RAINIER car is guaranteed not to cost one dollar for repairs within one year of purchase, unless you have an accident, and that it stands alone in this respect?

*Learn all about it in our new Bulletin just issued.*

**THE RAINIER COMPANY, Broadway, Cor. 50th Street, New York**

**BOSTON AGENTS: MORRISON-TYLER MOTOR COMPANY**

Good Agents Wanted in Unassigned Territory.

We shall exhibit at the Armory Show in New York.

*When Writing to Advertisers, Please Mention Motor Age.*



# THE MARMON

"A Mechanical Masterpiece"



Side View—Normal Position.

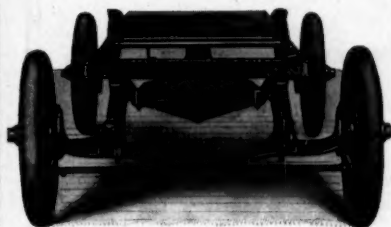
The  
Only  
Car



That

One Front Wheel and Opposite Rear Wheel Each Raised  
Over a Foot, Not a Strain Anywhere.

## Really Masters Rough Roads



Front View—Normal Position.

Other cars have been run over rough roads.

Other cars have been photographed on rough roads.

But no other car can be run over rough roads with any pretense of speed without subjecting the entire mechanism to binding, twisting strains and ruinous friction.

And no other car, no matter how many or what kind of springs it has, offers its passengers anything like the easy, gentle sway—the very luxury of motion—which the Marmon possesses on the roughest roads.

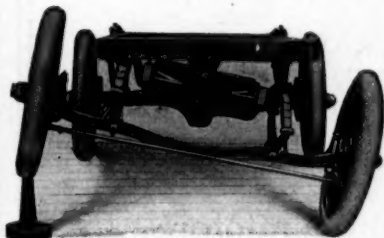
The Marmon is the only car that is naturally flexible.

It is the only car in which the tires and springs are of secondary rather than of primary importance in the elimination of jolts. It is the only car wherein the weight is always evenly distributed among the four wheels.

It is therefore the only car which does not put an excessive and unnatural burden upon the tires.

It is the only car wherein the running gear adjusts itself, instantly and without strain, to any position which the roughest road may demand.

Because it is the only car embodying the patented feature.



Front Wheel Raised Over a Foot, Body Level.

## Double Three-Point Suspension

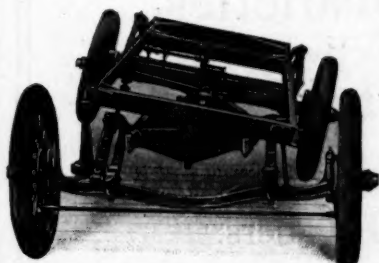
Luxurious solid cast aluminum body on one frame, power plant on another frame, each frame suspended on three pivotal points. Raising or lowering one wheel does not affect the other wheels. No matter which wheels are raised, no matter how the two frames are tilted, the entire power plant and rear axle are always in perfect alignment. Straight and rigid shaft drive (without Cardan joint or any sort of flexible couplings) delivers a greater percentage of power to the wheels than is possible in any other scheme of transmission.

Double Three-Point Suspension is not to be confused with the "sub-frame" or rigidly fixed "three-point support." It is a pivotal three-point suspension for both frames.

The Marmon oiling system (fully patented) has no equal. Starting and stopping with the engine, a constant and uniform flow of oil is forced through the hollow crank shaft directly into all the main engine bearings, crank and piston pin bearings. Simple, unfailing and very economical. 500 to 1,000 miles on less than a gallon of oil in the engine. What water cooled motor can do as well?

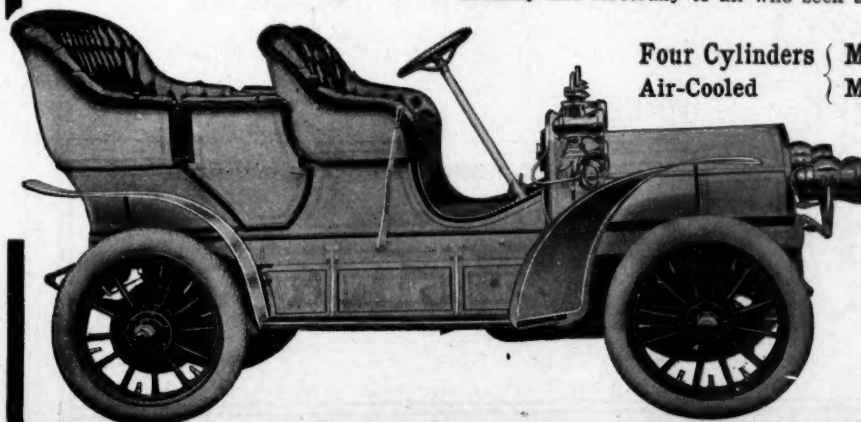
Four cylinder motor; perfectly air-cooled; powerful; very quiet. Spark and throttle control on steering wheel.

Stylish, superb in all its appointments. Replete with distinctive features that appeal instantly and forcefully to all who seek a strictly high-grade car. Write for Booklet No. 1.



Rear Wheel Raised Over a Foot, Lower Frame Level.

Four Cylinders { Model C, Four Passengers, \$2,500  
Air-Cooled { Model D, Five Passengers, 3,000



**NORDYKE & MARMON CO.**

Established 1851

Indianapolis, Ind.

Members American Motor Car Manufacturers' Association

When Writing to Advertisers, Please Mention Motor Age.

# Show Numbers

---

NEW YORK { January 11  
              { January 18

CHICAGO { February 1  
           { February 8

---

¶ Our issue of **January 18th**, devoted to the **two** New York Shows, will, we are confident, prove a surprise to our friends.

¶ **MOTOR AGE** **always** surpasses other weeklies in its manner of treating News, Mechanical and other descriptive writings, and will more than do itself proud in its illustrative and descriptive work of the New York Shows.

¶ As an advertising medium it will surpass anything heretofore published, will be read with greater interest by **every one** interested in the Motor Car Trade **in all branches**, and by thousands of present owners and prospective buyers than **any** issue of **any** other paper **anywhere**.

¶ **MOTOR AGE**, January 18th issue, will exceed **20,000 copies**, and will reach more than **100,000** readers.

¶ Advertising Copy will be received up to January 10th.

¶ If you haven't already specified space you will use, better do so immediately. The earlier we hear from you the better attention you will be assured.

---

## MOTOR AGE, Chicago



# SIT UP AND TAKE NOTICE

**\$6.50**  
FOR  
**\$3.00**

**MOTOR AGE**  
OF CHICAGO  
**AND MOTOR**

**\$6.50**  
FOR  
**\$3.00**

OF NEW YORK

**ONE YEAR FOR \$3.00**  
**ALSO THIS BOOK FREE**

## BROOKES AUTOMOBILE HAND-BOOK

is a work of practical information for the use of Owners, Operators and Automobile Mechanics,

It gives full and concise information on all questions relating to the construction, care and operation of gasoline and electric automobiles, including

Road troubles  
Motor troubles  
Carbureter troubles  
Ignition troubles  
Battery troubles  
Clutch troubles  
Starting troubles

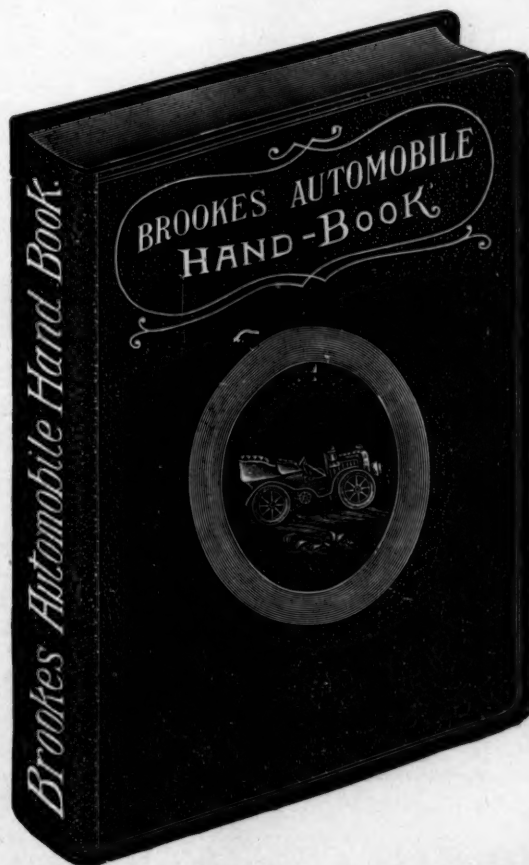
Pocket size, 4x6½. Over 200 pages.

With numerous tables, useful rules and formulas, wiring diagrams and over 100 illustrations, by

L. ELLIOTT BROOKES,

Author of the "Construction of a Gasoline Motor."

Price separately, One Dollar and Fifty Cts.



## TOTAL VALUE

Motor Age one year	- - - \$2.00
Motor one year	- - - 3.00
Brookes Automobile Hand-Book	1.50
	<hr/> \$6.50

From above you will see, by sending us three dollars, that you receive in return the total value of six dollars and fifty cents.

## Don't Delay

but send your order with remittance direct to

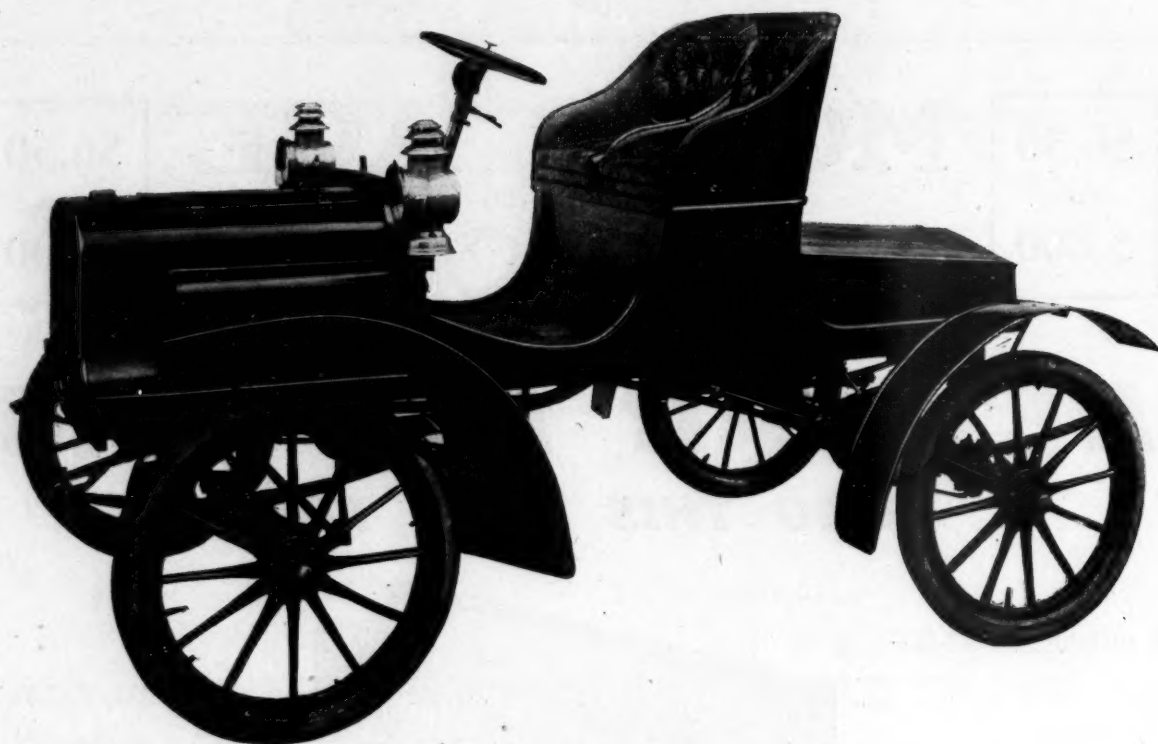
**Motor Age**

309 Michigan Ave.  
Chicago

THIS OFFER DOES NOT REFER TO SUBSCRIPTIONS SENT IN PRIOR TO THIS ANNOUNCEMENT

# The WALKER Runabout

*is the CANDY  
Absolutely Noiseless*



10 H. P.

**\$550 now—\$600 after April 1**

Double opposed engines under the hood. Direct shaft drive, two speeds forward and reverse. Speed, 4 to 25 miles an hour. 3-inch clincher tires, artillery wheels. It is the best selling proposition for 1906.

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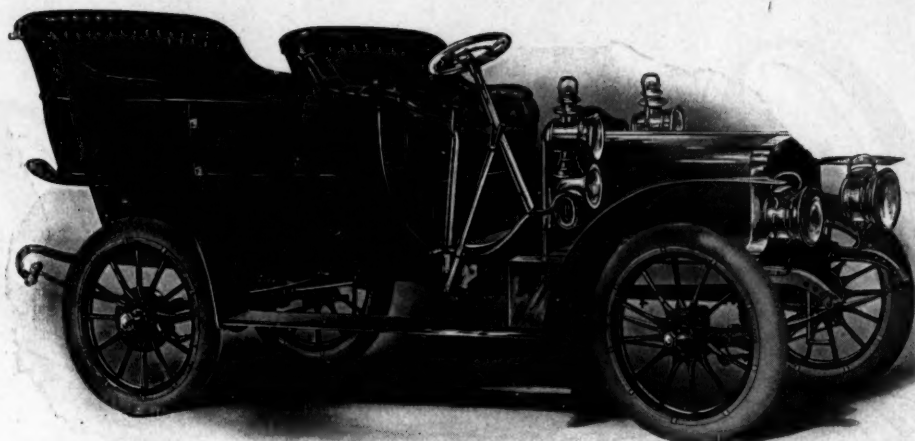
*Agents write today, if you want a money maker  
A postal brings complete description*

---

**WALKER MOTOR CAR CO., 107 E. Fort St., Detroit, Mich.**



# CORBIN CARS



Corbin Cars for 1906 are made in two models ONLY, a five-passenger, light touring car Model E of 24 h. p., 100 inch wheel base, weighing 1800 pounds, \$2,000—and a superb two-passenger Model G Car of 24 h. p., 93 inch wheel base, weighing 1600 pounds, \$1,800.

## THEIR SALIENT FEATURES ARE:

The Corbin system of air cooling—a vindication of the air-cooled idea.  
The Corbin system of mechanical valve operation—all operating from one cam shaft.

The Corbin steel pan motor and transmission support.

New floating bevel gear axle. New I beam front axle single piece forging. New control, new universal joints, new oiling system, and

## ANNULAR BALL-BEARINGS THROUGHOUT

These and many other commendable features are combined in

## THE CORBIN IDEA FOR SIMPLICITY, ACCESSIBILITY, DURABILITY, AND SAFETY

Corbin Cars will be exhibited at 69th Regiment Armory, New York, January 13th to 20th only,  
and at Coliseum, Chicago, February 3d to 10th.

# The Corbin Motor Vehicle Corporation

MAKERS OF CORBIN AIR-COOLED CARS

::

NEW BRITAIN, CONN.

4 W. 38th St., New York. Motor Mart, Park Sq., Boston. 1406 Michigan Ave., Chicago. 206 N. Broad St., Philadelphia.  
5905 Center Ave., E. End, Pittsburgh. 115 E. 7th St., Cincinnati. 470 Broad St., Newark, N. J.

# The Queen



**\$2000**

## One of Our Three New Models

**MOTOR**—4-Cylinder—26-28-H.P. **FRONT AXLE**—Solid-forged.

**DRIVE**—Shaft Bevel Gear.

**FRAME**—Pressed Steel.

**WHEELS**—32 x 4.

**WHEEL BASE**—101 inches.

**TRANSMISSION**—Sliding Gear.

**GROUND PARTS**—All Cylinders, Pistons, Piston Ring, Crank Shaft, Valves, Universal Coupling and Transmission Shafts.

**EQUIPMENT**—Five Lamps, Horn, Tools and Storage Battery.

We also have an 18-H.P., Two-cylinder Touring Car with Detachable Side door Tonneau, listing at \$1,100—and a Runabout 12-H.P. at \$800.

Write us for complete details and agency proposition.

**C. H. BLOMSTROM MOTOR CO., Detroit, Mich.**

New York Agents, Majestic Auto Co., Cor. 54th & Broadway

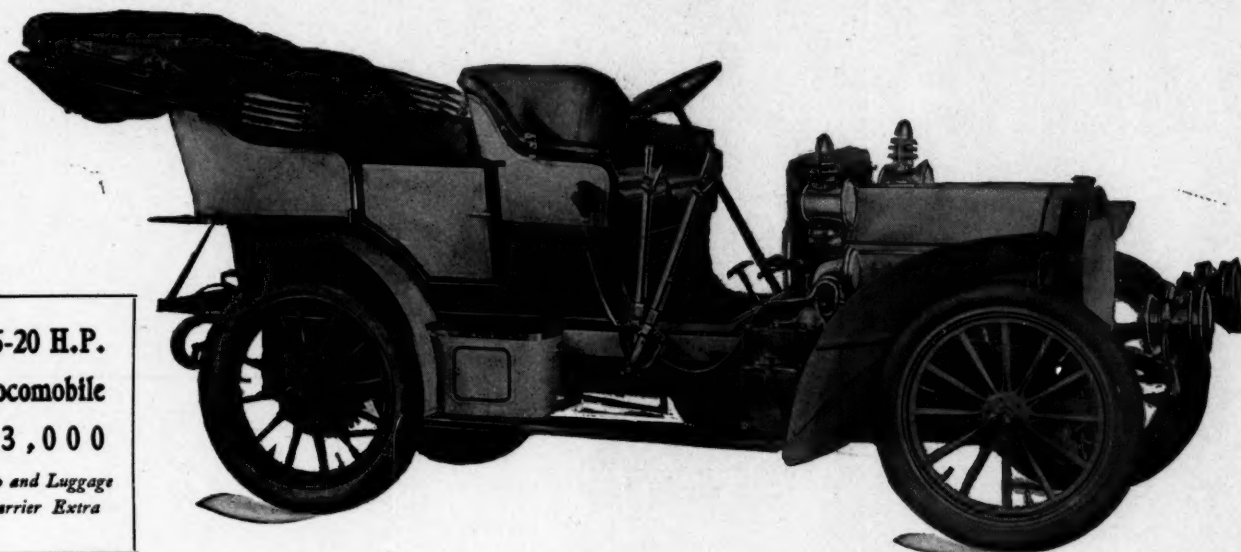
Chicago Agents, Branstetter Motor Co., 1337 Michigan Ave.



# Locomobile

"EASILY THE BEST BUILT CAR IN AMERICA"

15-20 H. P., \$3,000, 30-35 H. P., \$5,000, both with complete touring equipment



15-20 H.P.

Locomobile

\$3,000

Top and Luggage  
Carrier Extra

## TYPE "E" *Locomobile* 15-20 H. P.

**PRICE—\$3,000** ready for touring.

**EQUIPMENT**—Five brass lamps, horn, tire carrier, set of tools, extra parts, jack, lock box for tools and lubricants.

**BODY**—Double side entrance, seating five; extra wide doors; fitted with top irons; color and striping optional.

**MOTOR**—Four cylinder, 3½ inch bore, 4½ inch stroke.

**CAM SHAFTS**—Hardened forgings; all cams integral.

**CRANK SHAFT**—Machined from one solid forging.

**LUBRICATOR**—Large, mechanical lubricator.

**CARBURETOR**—Automatic, with balanced throttle valve.

**GOVERNOR**—Centrifugal type, prompt and positive in action.

**IGNITION**—Make-and-break.

**MAGNETO**—Low tension, our own design and manufacture.

**ALUMINUM PAN**—Placed underneath the machinery.

**FRONT FENDERS**—Have inner wings extending to bonnet.

**CLUTCH**—Cone type, with ample surface.

**TRANSMISSION**—Three forward speeds and reverse.

**DRIVE**—Double side chains.

**DOUBLE UNIVERSAL JOINT**—Between clutch and transmission.

**RUNNING BRAKE**—Large and powerful, metal to metal surfaces.

**EMERGENCY BRAKES**—Internal expansion type, metal to metal.

**BRAKE AND SPROCKET DRUM**—Bolted to each rear wheel spoke.

**AXLES**—"I" section hand welded axles.

**RUNNING BOARDS**—Rubber covered and brass bound.

**TIRES**—32x4 inches on all four wheels.

**WHEEL BASE**—93 inches.

**CONTROL**—Gas and spark levers on steering wheel.

## TYPE "H" *Locomobile* 30-35 H.P.

**PRICE—\$5,000** ready for touring.

**EQUIPMENT**—Five brass lamps, horn, tire carrier, set of tools, extra parts, jack, lock box for tools and lubricants.

**BODY**—Double side entrance, seating five to seven; extra wide doors; fitted with top irons; color and striping optional.

**MOTOR**—Four cylinder, 4½ inch bore, 5½ inch stroke.

**CAM SHAFTS**—Hardened forgings; all cams integral.

**CRANK SHAFT**—Machined from one solid forging.

**LUBRICATOR**—Large, mechanical lubricator.

**CARBURETOR**—Automatic, with balanced throttle valve.

**GOVERNOR**—Centrifugal type, prompt and positive in action.

**IGNITION**—Make-and-break.

**MAGNETO**—Low tension, our own design and manufacture.

**ALUMINUM PAN**—Is placed underneath the machinery.

**FRONT FENDERS**—Have inner wings extending to bonnet.

**CLUTCH**—Cone type, with ample surface.

**TRANSMISSION**—Three forward speeds and reverse.

**DRIVE**—Double side chains.

**DOUBLE UNIVERSAL JOINT**—Between clutch and transmission.

**RUNNING BRAKE**—Large and powerful, metal to metal surfaces.

**EMERGENCY BRAKES**—Internal expansion type, metal to metal.

**BRAKE AND SPROCKET DRUM**—Bolted to each rear wheel spoke.

**AXLES**—"I" section hand welded axles.

**RUNNING BOARDS**—Rubber covered and brass bound.

**TIRES**—34x4½ inches.

**WHEEL BASE**—106 inches.

**CONTROL**—Spark and gas levers on steering wheel.

"For race in stamps we will mail 12 souvenir postal cards showing various views of the LOCOMOBILE in the Vanderbilt Cup Race, making the best showing of any American car in any international contest. For race in stamps we will mail a five-color poster showing the LOCOMOBILE finishing the race. Printed matter of 1906 cars on application."

The *Locomobile* Company of America, Bridgeport, Conn.

NEW YORK, 76th St. and Broadway.  
PHILADELPHIA, 249 N. Broad St.

Member Association Licensed Automobile  
Manufacturers.

BOSTON, 15 Berkeley St.  
CHICAGO, 1354 Michigan Ave.

## THE COLD PROOF

GET OVER  
THE  
BAD MONTHS  
WITHOUT  
DIFFICULTY

FEBRUARY  
**Waltham Orient**

### Zero Weather

Has no effect on an ORIENT AIR-COOLED CAR.  
Good for twenty-four hours a day and 365 days a year.

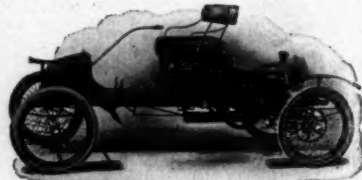
#### Five Touring Models

Model R	20 H.-P.	\$2250
Model N	20 H.-P.	\$2000
Model M	16 H.-P.	\$1750
Model L	16 H.-P.	\$1750
Model K	16 H.-P.	\$1600



Model R. \$2250

A car of the utmost simplicity. Looks well, rides well, runs well and *stays* well.



Model BB. \$400

#### Orient Friction-Drive Buckboard

The lowest priced motor car in the world. 4 H.-P. AIR-COOLED. Weight, 550 lbs. Gasoline consumption, one gallon to 35 miles. Oil consumption, one pint in 90 miles. Maximum power, 40 to 1. Will climb grades and drive through sand that no other motor car, of any horse power, can negotiate. Speed 30 miles an hour.

Write for our new 1906 Catalogue, which tells the AIR-COOLED STORY.

**WALTHAM MFG. CO.**

Waltham, Mass., U. S. A.

Members Ass'n Licensed Auto Mfrs.



# The Six-Cylinder Ford

"Always a year or two ahead." When the single-cylinder car was "it," Henry Ford produced a double-cylinder opposed motor, more powerful and at a lower price.

When the automobile trade finally awakened to the possibilities of the two-cylinder opposed motor, Mr. Ford produced a four-cylinder car at \$2,000 that was in a class by itself, the public having been taught to believe that such a car could only be produced at a fabulous price.

And now, having exhausted the possibilities of the four-cylinder car in a touring car class, he has introduced it into the Runabout class, and in addition offers a six-cylinder car that is proportionately as far in advance of all competition as his first double opposed motor.

This is a wonderful car.

First, its six cylinders, with 40 horsepower, give a latitude of speed never before accomplished in a car of its class and weight, 2,000 pounds. From four miles per hour on a high-gear up to 50 miles.

While one cylinder of this car will develop sufficient power to drive it along an ordinary asphalt pavement, the whole six cylinders inspire the driver with the confidence that there is an enormous latent energy in his motor, ready for any new demand without overloading the motor, making it the easiest controlled and most flexible automobile motor ever built.

When you have seen this motor in operation you will fully appreciate that we have the smoothest running automobile motor in the world.

**Price, \$2500.00**

## The Ford Four-Cylinder Runabout

It is a fact that thousands of these cars are in course of construction.

Like all Ford cars, this one is a radical departure from previous and popularly-accepted designs, and there is a reason behind every radical idea.

Henry Ford built a four-cylinder engine for his Runabout with fewer parts than the old-fashioned single-cylinder engine had, and the Ford Motor Co. have an enormous factory that does nothing but build motors for this Runabout, with a capacity of 100 complete engines every day.

The whole thing is very simple when you go about it right.

This is why we can build the Ford four-cylinder Runabout for \$500.00.

**We are making 40,000 cylinders,  
10,000 engines,  
40,000 wheels,  
20,000 axles,  
10,000 bodies,  
10,000 of every part that goes into the car.**

Think of it! Such quantities were never heard of before. We buy 40,000 spark plugs—10,000 spark coils—40,000 tires—all *exactly alike*.

The first Runabout (Model A) we built cost \$30,000—yet we sold duplicates of that model for \$750.00.

It is the quantity that counts.

## Ford Motor Company, Detroit

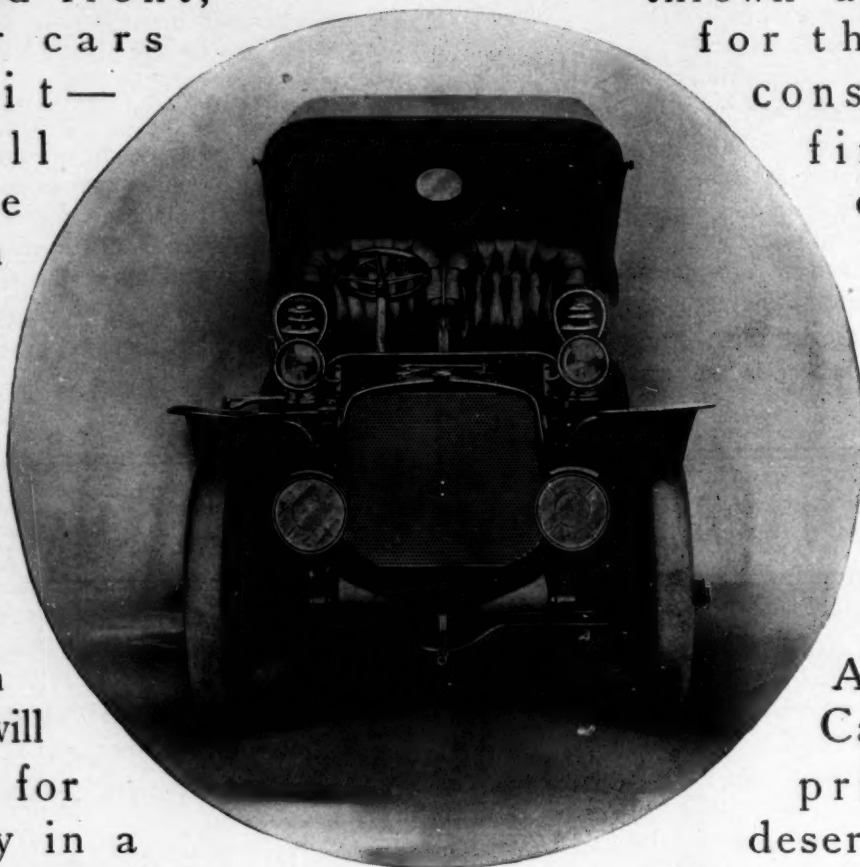
*Member American Motor Car Manufacturers' Association, Chicago*

Branches: 147-149-151-153 Columbus Ave., BOSTON; 1721-23 Broadway, NEW YORK; 727 Main St., BUFFALO; Broad and Buttonwood Sts., PHILADELPHIA; 1413 Michigan Ave., CHICAGO; 1916 S. E. Euclid St., CLEVELAND and 308-310 E. 11th St., KANSAS CITY

CANADIAN TRADE supplied by FORD MOTOR COMPANY of Canada, Ltd., Walkerville, Ontario

# A GOOD FRONT

We believe in putting up a good front, and our cars show it—as it will also be shown in our New Building at Fifty-fifth St. and Broadway, which we hope will be ready for occupancy in a few days, and where we will have a continuous plate glass corner front, permitting LOZIER MOTOR CARS to be shown to the best possible advantage. And they will stand all



the light that can be thrown upon them, for their fine construction, finish and equipment is such as invites the very closest inspection. The Lozier Car is the very largest American Car, and in price it is deservedly the highest. We are now delivering Limousines, Landaulets, and Touring Cars, 35 Horse-power, Type C, 1906 Model, and every owner of a LOZIER MOTOR CAR is one of experience who has at last found the ideal in our product.

## THE LOZIER MOTOR COMPANY

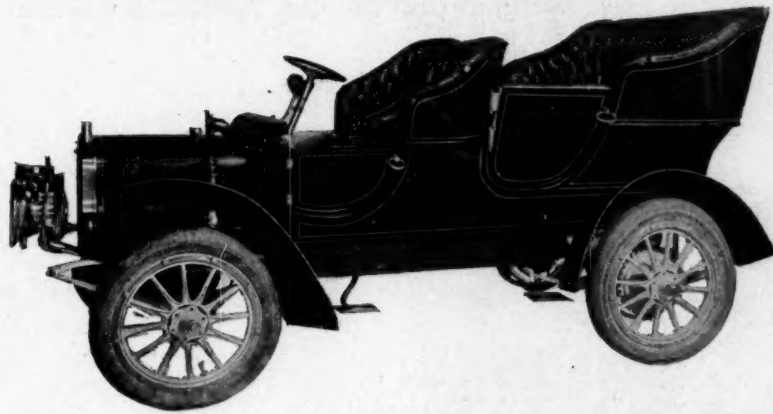
Temporary Quarters at R. M. Stiver's Carriage Room, 19 W. 62nd St., New York City



# The CURTAIN HAS RISEN

## The Kansas City Car

Not a New Product—but the development of six years of practical experience in car building



### The Car that Climbs the Hills

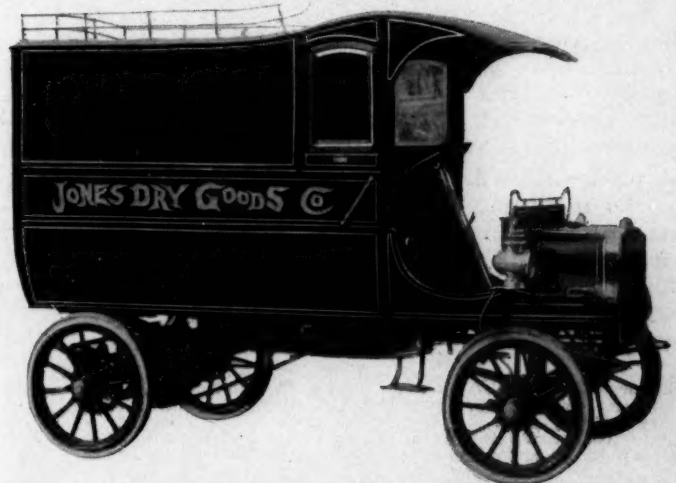
This car is fitted with 35 h. p. opposed motor, has two speeds forward and one reverse. Long wheel base, platform springs and built substantially and artistic in detail. Any make of tire.

### The Commercial Car that Delivers the Goods

Cars built to haul 1, 2, 3 and 6 tons.

Fitted with double opposed motors, etc.

Will not be at New York Show, but will have Exhibit at Chicago Show.



Opportunities for Live Agents ... Write us

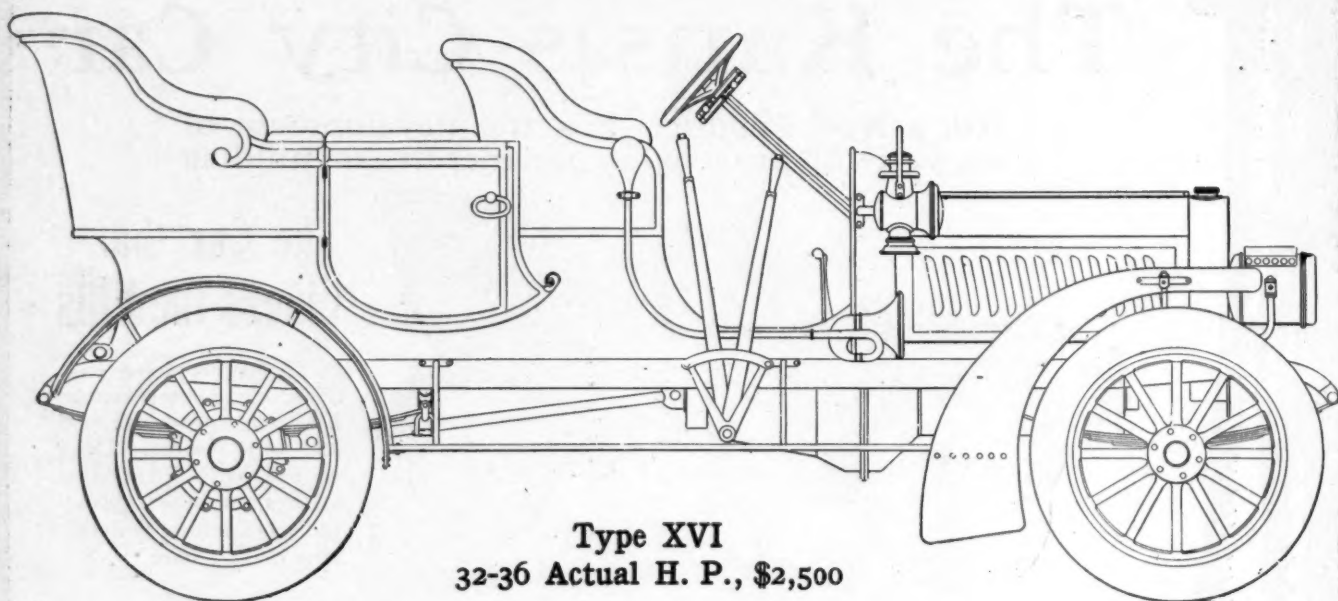
## Kansas City Motor Car Co.

KANSAS CITY, MO.

# ST. LOUIS

## 1906

### "RIGS THAT RUN"



**Type XVI**  
32-36 Actual H. P., \$2,500

Every AUTOMOBILE, no matter what the PRICE, STYLE or CONSTRUCTION, contains some individuality which, in its builders' estimation places it above its competitors. Every manufacturer strives to have the best and undoubtedly some one HAS THE BEST, but a fair verdict cannot be rendered by any one man. ONE exclusive feature does not constitute an entire MOTOR CAR no more than one individual constitutes a MILLION DOLLAR ORGANIZATION. An engine may be absolutely perfect, but if the power is not transmitted correctly to the rear wheels the car is a FAILURE and vice versa. To build a successful car the manufacturer must give as much attention to the smallest details as the largest. THE ST. LOUIS MOTOR CAR COMPANY are the Pioneer Automobile Manufacturers of the UNITED STATES. FOURTEEN YEARS of BUILDING EXPERIENCE has taught us CONSIDERABLE. We know the material and style of construction best adapted for AMERICAN roads and CONDITIONS. We know how to manufacture intelligently and economically. WE KNOW that TYPE XVI is equal to any AUTOMOBILE built in America. Our claim is not based upon any ONE exclusive feature. It's "RIGHT" all the way. Compare our specifications with cars listing from \$3,000.00 up, then make arrangements for demonstration at any of the coming shows. We still have some valuable territory at our disposal and our AGENCY PROPOSITION is just as thorough as our car.

AGENTS who have already contracted for over two-thirds of our '06 product tell us that "TYPE XVI" will be the car of the year. We KNEW this four months back. If you are INTERESTED it will be a pleasure to tell you WHY.

Engine—32-36 ACTUAL H. P. 4 cylinder, water cooled.  
Ignition. Jump spark. Splitdorf coil. Pitsfield timer. Storage battery and dry cells.  
Transmission. Sliding train, three forward and reverse.  
Rear Axle. Floating type, bevel, Timken roller bearings throughout.  
Front Axle. 1 section, drop forged, roller bearings.  
Frame, cold rolled pressed steel, special stock, channel section, full pan in under hood covering entire engine.  
Wheel Base, 110 inches.  
Wheels, superior quality, second growth hickory.

Tires 32x4" optional.  
Valves, mechanically operated, all interchangeable.  
Carburetor, float feed, automatic governor requiring no adjustment.  
Brakes, transmission, foot and emergency lever, 5 in number.  
Body, exceptionally roomy, will carry seven people. Upholstering, general appearance and workmanship unsurpassed.  
Equipment. Two brass side lights, one tail light, two head lights, full tool equipment, baggage haul, etc.  
1906 CATALOG GIVING FULL DETAILED DESCRIPTION NOW READY.

## ST. LOUIS MOTOR CAR CO., Peoria, Ill.

Sales Dept., 1229 Michigan Avenue, Chicago, Ill.



Do you want  
**ONE PACKARD**  
at a Bargain?

For cut see  
**FRONT COVER PAGE**

Only difference being that this car is  
a *rear entrance* instead of side entrance  
as shown in Packard advertisement.

**Packard 24 h. p. Rear Entrance Tonneau**

**\$2,000**

☐ This car cost \$3,500. It is absolutely as good as new. If it was a side entrance it would be worth \$3,500 today.

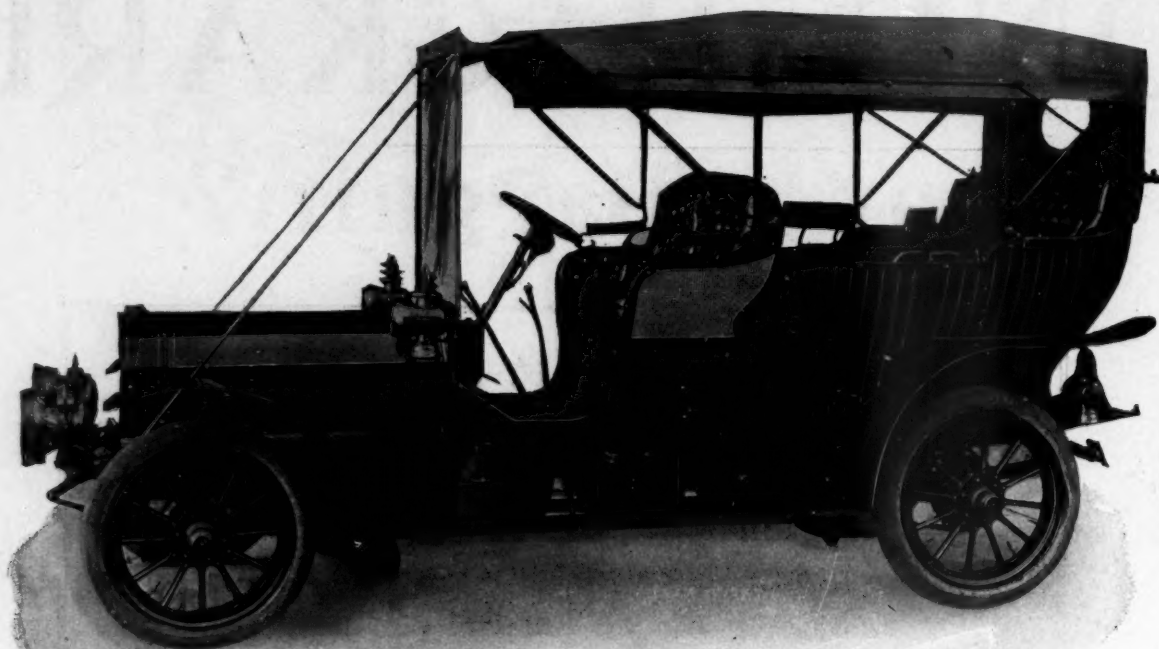
☐ This car belonged to Mr. M. N. Moyer, President of Windsor Folding Bed Co., of Chicago. It has been used with intelligence and care. It has been thoroughly overhauled, re-varnished and looks brand new. Tires are perfect. The whole outfit will bear the closest inspection. \$2,000 will buy it.

☐ We invite your inspection—or if further information is desired write us.

**RALPH TEMPLE AUTOMOBILE CO.**

309 Michigan Avenue .... CHICAGO

# APPERSON



50-55 H. P. Car With Special Body. Price on Application.

## Apperson Bros. Build Special Cars

For those who want the best. We only build fine, high-priced cars and each car is given personal attention not given in factories where cars are turned out by the hundred. We make practically every part of our cars in our own factory. No hand-me-down material made by parts makers will be found in our product.

### BRANCH HOUSES:

BOSTON: 43 Columbus Ave.

PHILADELPHIA: 326 N. Broad St.

NEW YORK: 66 West 43d St.

CHICAGO: 394 Wabash Ave.

## Apperson Bros. Automobile Co.

Members Association Licensed Automobile Manufacturers.

KOKOMO, INDIANA



# *The* **APPLE** *for* **1906** *Ignition System*

## *The Complete Apple Ignition System for 1906*

The complete system consists of the Apple Automatic Storage Battery Charger, the Apple Storage Battery, the Apple Automatic Cut-Out with all necessary coils, plugs and timers. Can be purchased entire or we will furnish any part as desired.

### *The Apple Automatic Cut-Out and Volt-Meter*

When the engine is not running, it automatically cuts out the dynamo from the storage battery. The volt-meter indicates the voltage of the batteries.



Storage Battery

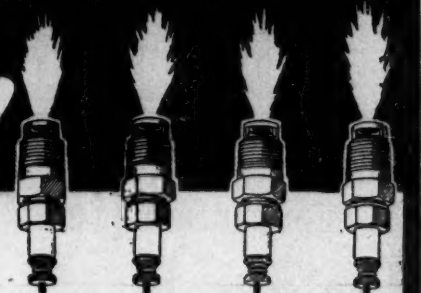
### *The Apple Storage Battery*

The only PORTABLE storage battery on the market; composed of lead bottle units, absolutely unbreakable. Can be used in connection with our Automatic Battery Charger, or independently, as desired. Incomparably superior to dry cell batteries. Furnishes a fat hot spark that cannot be surpassed for ignition purposes.

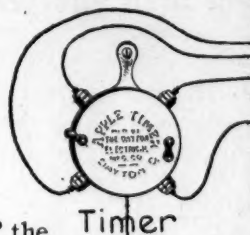
We manufacture coils, spark plugs, timers, and everything used for ignition purposes. Specify an Apple outfit on your car. Increased satisfaction and saving on battery renewals will more than pay for the additional investment.

Write to-day for full information about our system.

**THE DAYTON ELECTRICAL MFG. COMPANY**  
75 Beaver Building, Dayton, Ohio



Spark Plugs



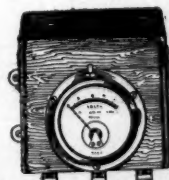
Timer



Coils

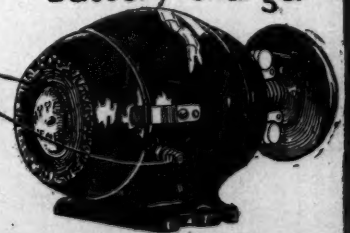
### *The Apple Automatic Battery Charger*

generates a steady, strong current sufficient to keep the batteries always full of juice. Our 1906 dynamo is the BEST DYNAMO MADE IN THE WORLD, irrespective of size, or use for which intended. Uses electro-magnets electrically formed by currents generated by the dynamo itself. No so-called permanent magnets affected by vibration and heat as found in magnetos.



Automatic Cut Out

### *Battery Charger*



# A New Pneumatic Tire

MADE BY

# FIRESTONE

## The Rubber Tire Specialists

¶ After exhaustive experiment and careful study of the requirements of pneumatic tires, we have invented a tire which has every possible good feature of the best, with practically all of their objectionable features eliminated.

¶ Firestone pneumatic tires have withstood the most exacting tests during the past two years and we can assert positively that we have more nearly reached the point of absolute perfection than has yet been attained by pneumatic tire makers.

¶ Firestone Tires are sightly on the wheels. Good, practical common sense and accurate knowledge of the rigorous requirements of a good tire are apparent to the most casual observer. The fastening device is positive and will securely hold the tire under all conditions and, whether inflated or deflated, there is no possibility of creeping or rim cutting. The most inexperienced person can easily remove the tire in two minutes and replace it in the same time and he *cannot pinch the inner tube* because in the Firestone construction it simply *cannot be pinched*.

¶ For many years the name FIRESTONE has stood for the highest grade of excellence in solid tires. We know the tire business in every detail. We know we have a pneumatic tire which is without a peer, a tire which will receive and merit an extensive demand. To enable us to meet any demand which may be made, we have erected immense new buildings and equipped them solely for the manufacture of pneumatic tires.

¶ OUR FACILITIES ARE ENORMOUS. OUR TIRES ARE RIGHT. Our successful business career has demonstrated our ability to accomplish what we undertake.

¶ We want you to know more about Firestone Tires. Study them. Examine them as closely as you please and we know you will be a Firestone customer.

WRITE FOR ILLUSTRATED BOOKLET

**Firestone Tire & Rubber Co.**  
**AKRON, OHIO**

... Branches ...

NEW YORK

BOSTON

PHILADELPHIA

CHICAGO

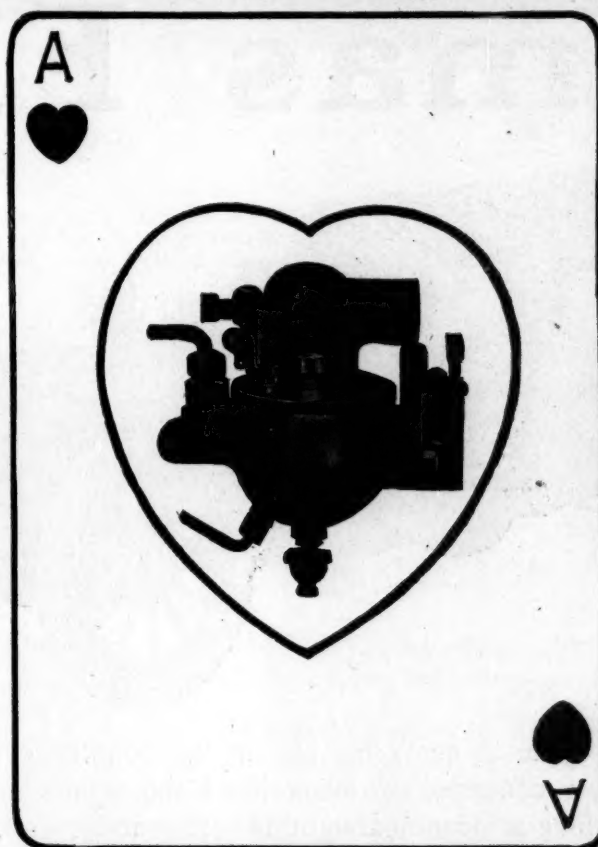
DETROIT

ST. LOUIS



# SCHIEBLER CARBURETOR

**STANDARD  
OF THE  
WORLD**



**THE HEART  
OF THE  
AUTOMOBILE**

## THE TRUMP OF TRUMPS

### WHEELER & SCHEBLER, Mfrs., Indianapolis, Ind., U. S. A.

P. J. DASEY, Factory Representative, 431 Wabash Avenue, Chicago, Illinois  
 Agencies in all the Principal Cities of the World

E. J. Edmond.....44th St. and 6th Ave., New York City	Kansas City Motor Car Co., S.-W. Agts., repository 310 W. 9th St., factories.....Kansas City, Mo.
Excelsior Supply Co.....Chicago	Chansior & Lyon Motor Sup. Co. 508 Golden Gate Av., San Francisco
Automobile Supply Co.....Chicago	Los Angeles Auto Co.....Los Angeles
Beckley-Ralston Co.....Chicago	McCulloch & Boswell.....Winnipeg, Man.
E. B. Belcher.....26 Green St., Malden, Mass.	Wilson & Co.....Ottawa, Ontario, Can.
Jos. Brassard.....Central Falls, R. I.	Canada Cycle & Motor Co.....Toronto Junction, Can.
Ellsworth Foundry & Machine Shop.....Ellsworth, Me.	Schuman Carriage Co.....Honolulu, T. H.
National Electric Supply Co.....Washington, D. C.	Turnbull & Jones.....Dunedin, N. Z.
Smith Electrical Engineering Co.....Watertown, N. Y.	Geo. Neill & Co.....38 Fenchurch St., London, England
The Wallace Bros. Co.....Norfolk, Va.	Du Brie Motor Co.....Detroit, Mich.
N. Philadelphia Auto Station.....3425 N. Broad St., Philadelphia	C. J. Smith & Co.....354 St. Peters St., St. Paul, Minn.
F. C. Bowler.....332 Baronne St., New Orleans	
Consolidated Supply Co.....Denver	

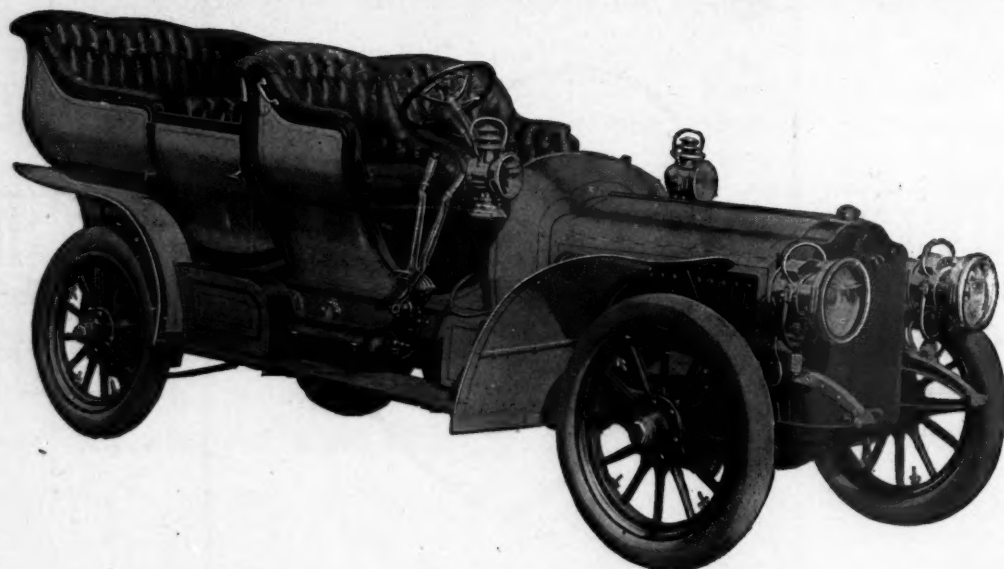
# The Largest Factory in the World

**Devoted to the manufacture  
of high powered automobiles**

Now in course of construction will be taxed to the full limit of  
its capacity to meet the extraordinary demand for the magnificent

**50 H. P.**

# Thomas Flyer



**T**HE STORY is the same in every big city in the country—the complete supremacy of this wonderful car conceded on every hand and agents begging for a larger allotment. There is nothing accidental about this extraordinary enthusiasm. It is the logical outcome of years of painstaking experience and preparation, culminating in a car which represents the most costly and the most perfect possible construction throughout. The 1906 Thomas marks the arrival of the long expected American car which will wrest supremacy from the finest foreign product. Just one indication of its marvelous efficiency is the fact that

**EVERY STOCK THOMAS IS GUARANTEED TO SHOW SIXTY  
MILES AN HOUR BEFORE LEAVING THE FACTORY**

We are merely consulting your own interests when we advise you to get in touch with the nearest Thomas representative at the earliest possible moment.

---

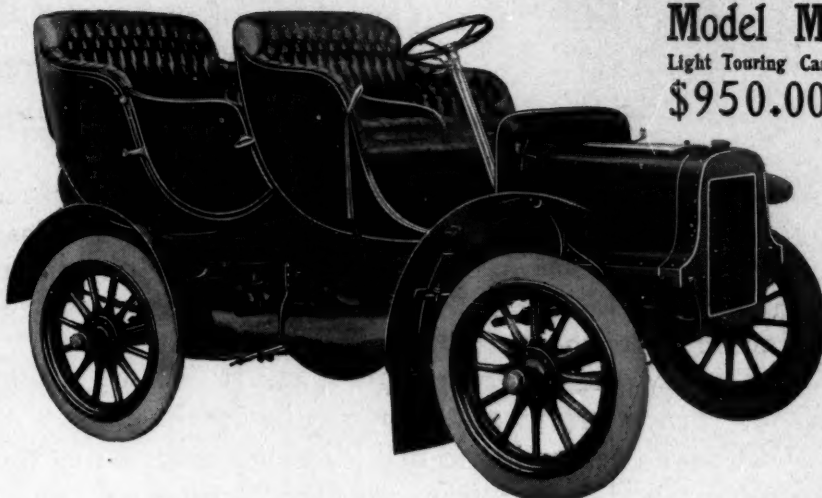
**THE E. R. THOMAS MOTOR CO.** <sup>1417</sup> **Niagara St. Buffalo, N. Y.**

Members Association Licensed Automobile Manufacturers.



# 1906 Single Cylinder Cadillacs

Motor, single cylinder, four cycle 5 in. x 5 in. Ten h. p. water cooled. Copper water jacket. Mechanical pump feed lubricator. Jump spark ignition. Planetary transmission, two speeds forward and reverse. Pressed steel frame, channel pattern. Brake on extra large differential drums. Chain drive. Three spring suspension, rocker joint on front spring, more than doubling spring efficiency. Wheel base 76 inches. Tires 30x3½.



**Model M**  
Light Touring Car  
**\$950.00**

Our four cylinder line consists of Model H, 30 h. p. Touring Car at \$2,500. Runabout at \$2,400 and Coupe at \$3,000. Also Model L, 40 h. p. Touring Car at \$3,750 and Limousine at \$5,000. These will be announced in detail later and exhibited at New York at Madison Square only, also at the Chicago Show.

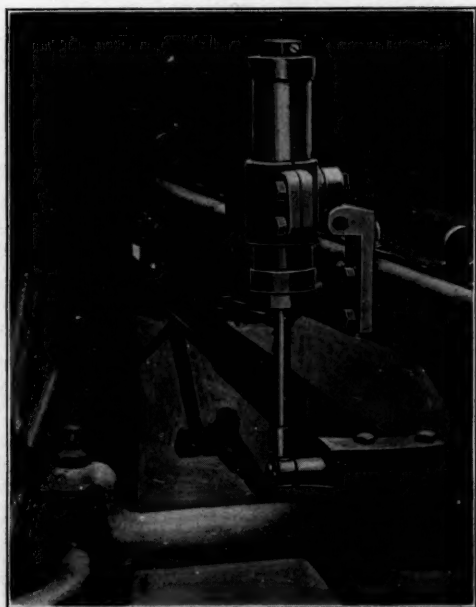
## Cadillac Motor Car Company, Detroit, Mich.

*Member Association Licensed Automobile Manufacturers.*

# AIR

The Most Elastic  
Substance Known  
to Science.

## "THE PERFECTION AIR CUSHION" made in Baltimore.



Patented Aug. 8, 1905

This double acting cushion absorbs and dissipates every shock received while riding over rough or uneven surfaces.

No violent recoil of springs after obstruction is passed---the result of which in the past has been so expensive; but every movement of the body of the automobile is eased on a perfect cushion of air.

By reducing the vibration, it prevents lost traction---thus increasing your speed, prolonging the life of your engine and tires, and at all times gives you full and complete control of your car.

It permits of the use of lighter and more flexible springs---a point worthy of consideration.

The PERFECTION AIR CUSHION requires no re-adjusting---it is of few parts, can be applied to any car at very small cost and little delay.

It is a slightly ornament to any automobile.

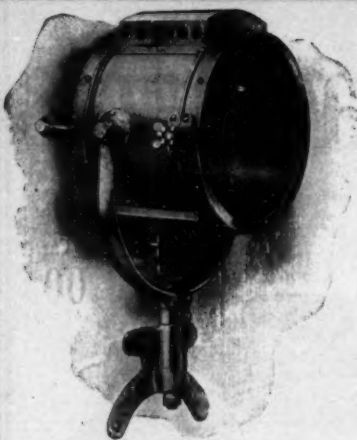
Every part guaranteed free from any imperfections.

For full particulars write

## The Sheddan Manufacturing Company

137 W. Fayette Street,

BALTIMORE, MD., U. S. A.



## Do You Realize This—

that, this very day, while you perhaps are considering the purchase of that sporty-looking French lamp—or of an American copy,—the Frenchmen themselves are buying the Rushmore Searchlight in preference?

It's a fact.

We haven't said much about our Paris agency, opened at 95 Ave. des Champs Elysees last fall—we preferred to wait for results. Well, our shipments there and to London already, average several hundred dollars a day, and those clever Frenchmen are saying that the Rushmore beats the best of their lamps "tout a fait." Among our customers are M. C. L. Charley, the Mercedes agent, and Baron de Rothschild. They don't buy lamps just for rococo brass work, you may be sure!

We have been trying to make you understand that the Rushmore, with its short focus lens mirror, is different from any other lamp made, and so much better that the others are not worth considering. Very likely, if you have not seen the Rushmore, you thought it was "all talk." But if it were, how about those Frenchmen?

Worth thinking twice about, isn't it?

We send our searchlight on ten days' free trial. Why not judge for yourself?

**RUSHMORE DYNAMO WORKS, :: Plainfield, N. J.**

# Compound Doctor's Stanhope

**JOSEPH E. ROOT, M. D.**  
67 Pearl Street HARTFORD, CONN.

December 12, 1905.

Mr. Schull, Mgr. E. H. V. Co.:

Dear Sir—I thought it might be of interest to you to know how my "Doctor's Stanhope" was progressing.

I am pleased to voluntarily state that it is way beyond my expectations, high as they were. You understand I'm a "greenhorn" at running a motor car, and it's pulled me every day in town and out—on my professional rounds—always brings me home—never has had to go to a garage or repair shop for adjustments, etc.—goes through the cold and snow (the latter with chains on) just the same. It continues to ride as easy and warm as a hack. My total running expenses for my first month, ending December 8th, were \$8.86. Upwards of six hundred (600) miles were covered.

Thanking you for furnishing me such a competent, durable and elegant machine, I am,

Yours, etc.,

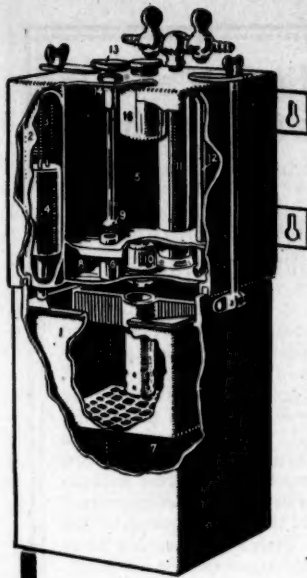
JOSEPH E. ROOT, M. D.

**THE E. H. V. CO., Middletown, Conn.**



12-15 H. P., \$1,400





# HERE IT IS

## That "Trouble-Proof" Rushmore Generator

We haven't room to tell you about all its unique points of merit, but you can't afford to miss these three:

**FIRST:** The shaking carbide basket 1, hung by opposite corners and jarred constantly while the car is moving by the weight 4, hung on spring 3. This insures the instant separation of the lime dust from the carbide, and prevents the local overheating, caking of lime, and production of tarry compounds, with which you are probably familiar in other generators.

**SECOND:** The regulating chamber 8, separated from the water tank 5 by a false bottom, through which the water passes by the shut-off valve 9 and tube 6. To reach the carbide, the water must overflow the short central standpipe 10, and when the gas reaches normal pressure it forces part of the water back through tube 6 to the tank, uncovering the top of standpipe 10. No water can thereafter reach the carbide save through a reduction in the gas pressure, and the action is perfectly automatic, requiring no hand regulation.

**THIRD:** The safety vent pipe 12, ordinarily not needed, but useful in case of any accidental accumulation of gas when valve 9 is closed.

Every one of these features is essential to a perfectly automatic portable generator. Every one of them is broadly covered by Rushmore patents and cannot be imitated.

*Our catalog tells other good points. Write for it.*

**RUSHMORE DYNAMO WORKS, ... Plainfield, N. J.**

# FISK TIRES

## SAVE TIME, MONEY AND TEMPER

**W**ITHOUT FISK TIRES you are simply wasting Time, Money, Temper,—and Comfort. They are the only tires constructed on Strictly Scientific and Practical Principles.

**Positive Locking Device, insuring SAFETY**  
**All Air Above the Rim, affording COMFORT**  
**Superiority of Quality, guaranteeing DURABILITY**

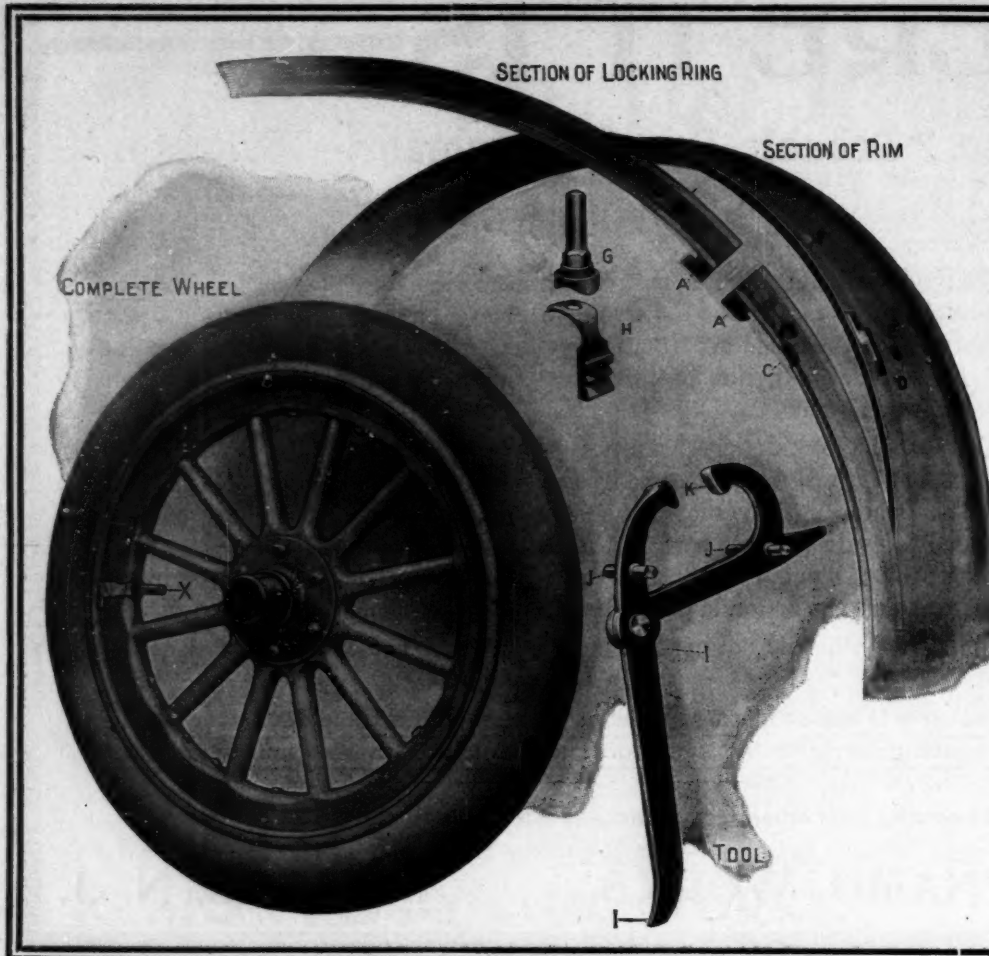
Our production for '06 is the finest that we have ever offered, representing, not merely high-grade exterior evidences, but Honest Quality—"Fisk Quality" that is at present unsurpassed.

*Truly, 'twill be Worth Your While  
To Buy Fisk Tires.*

We should like to send you a little printed article on tires

**THE FISK RUBBER CO.,  
Chicopee Falls, Mass.**

*When Writing to Advertisers, Please Mention Motor Age.*



## Your Tire Off and On in Less than a Minute

Tells exactly what is accomplished  
by means of the

### Goodrich Quick Detachable Construction

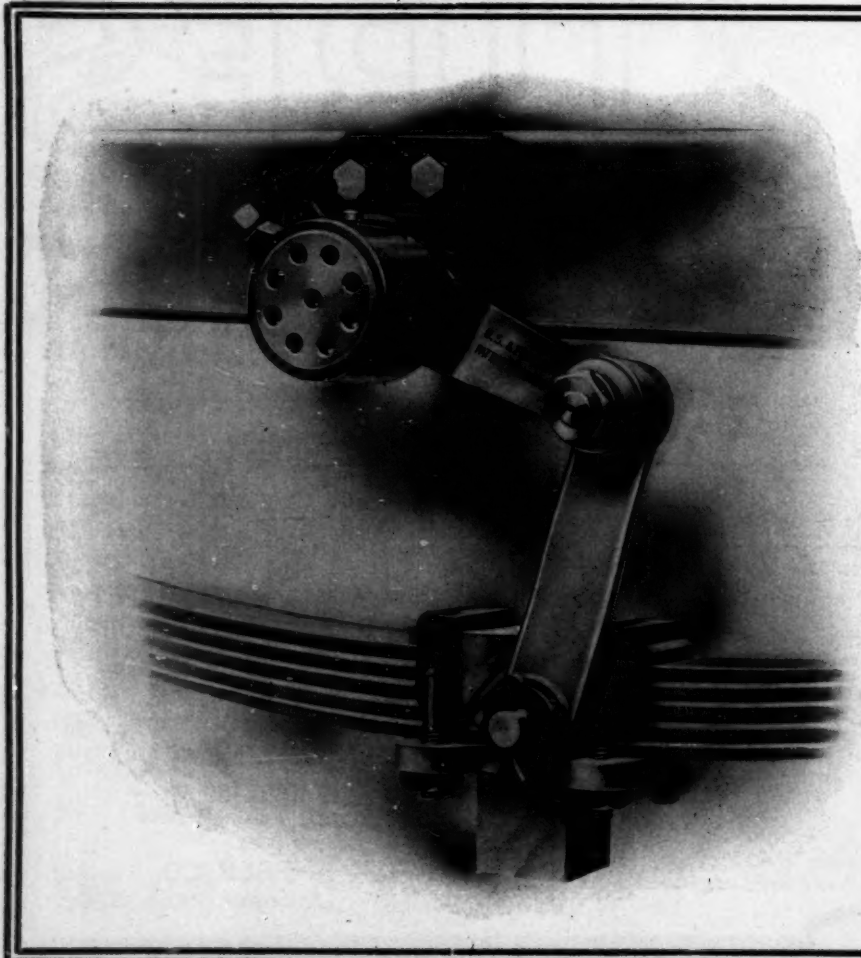
And a visit to our Exhibit at the New York Automobile Show, Madison Square Garden, will afford you the opportunity to see our claims proved.

Perhaps you may wish to make dead sure and detach and attach the tire yourself. It is a pleasant little pastime with all the old time hard work features cut out. You will enjoy the experience and be impressed with the fact that the Goodrich Quick Detachable Tire and Rim is a great achievement in automobile tire building.

Space in Central Boxes directly over Madison Square entrance.

### The B. F. Goodrich Company, Akron, O.

New York, 66-68 Reade St. and  
1625 Broadway  
Buffalo, 781 Main Street  
San Francisco, 392 Mission Street  
Boston, 161 Columbus Avenue  
Philadelphia, 909 Arch Street  
Cleveland, 416 Erie Street  
Chicago, 141 Lake Street  
Detroit, 80 East Congress Street  
Denver, 1444 Curtis Street  
London, E. C., 7 Snow Hill



HOLLANDER & TANGEMAN  
SOLE AGENTS FOR UNITED STATES & CANADA  
6 WEST 45TH STREET, NEW YORK CITY  
AUTOMOBILES F. I. A. T. AUTO-BODIES  
TURIN, ITALY

Dec. 2nd, '05.

The Diezemann Shock Absorber Co.,  
1311 Hudson St.,  
Hoboken, N. J.

Gentlemen:-

We have found the Diezemann Shock Absorbers satisfactory in every way, and doing all you claim for them, and have decided to use them in preference to any other make.

Yours very truly,

HOLLANDER & TANGEMAN.

## Ride Rough Roads Right

BY USING

### Diezemann's Shock Absorbers

Write for Booklet, showing Details of Construction  
and copies of testimonials, to

Diezemann Shock Absorber Co.  
1311 Hudson St., Hoboken, N. J.



# The Automobile WASHSTAND-TURNTABLE

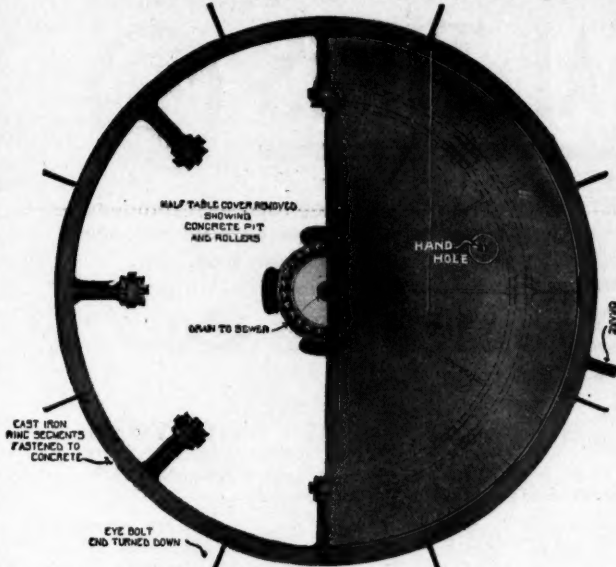
It greatly increases the capacity of a garage by saving the space otherwise required for maneuvering cars. It also permits a car to always face the door, thereby avoiding the inconvenience and danger of accident incident to backing it, when the approach is difficult.

The table is of cast-iron supported by a ball-bearing pedestal in center and rollers near its outer edge. It rests in a concrete pit about 12 inches deep, the edges of which are protected by an iron ring or curb as shown. It moves easily, is practically indestructible and is absolutely fire-proof.

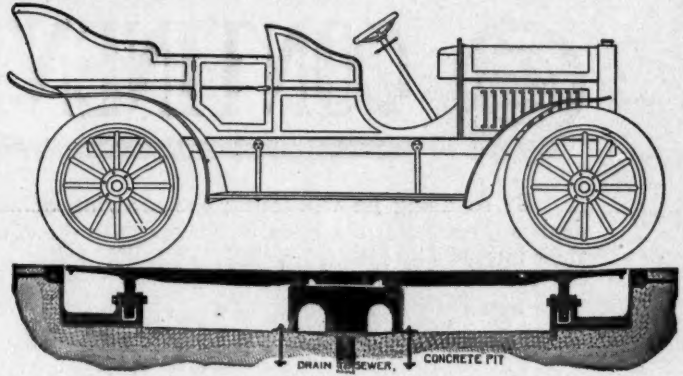
It greatly facilitates the washing of cars, all water from surface of table and garage floor passing to sewer through a drain pipe in center of pit.

We make Washstand-Turntables and also plain turntables (without the washstand feature) for wheel bases up to 126 inches.

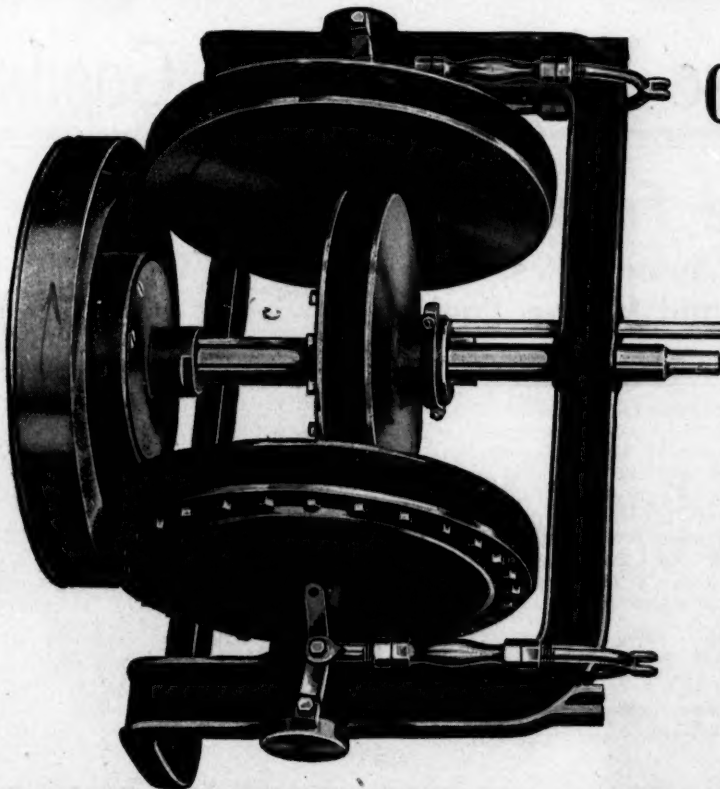
We will be pleased to send full descriptive matter and quote prices on request.



Sectional views of WASHSTAND-TURNTABLE. Patent applied for.



**LINK-BELT  
Machinery Co.**  
CHICAGO



## The Gearless Transmission

PATENTED

**Direct Drive on High Speed**

UNLIMITED SPEEDS  
FORWARD AND RE-  
VERSE.

CANNOT BE INJURED BY CARE-  
LESS HANDLING.

ADJUSTMENTS ARE FEW AND  
SIMPLE.

NOISELESS—NO OIL BATH REQUIRED.

APPLIED TO ANY CAR.

WRITE FOR CATALOGUE

**GEARLESS TRANSMISSION CO., Glens Falls, N. Y.**

Armory Show, New York, Room G. Gallery.

## **DISCRIMINATING AND APPRECIATIVE**

Mr. E. P. Blake, Manager of the Haymarket Automobile Station, Boston, and New England Agent for the well known Jackson Cars, manufactured at Jackson, Mich., considers that the tire equipment for those cars cannot be too good. He has consequently ordered all the cars for the New England States, for the season of 1906, to be equipped with Imported



# **CONTINENTAL TIRES**



By so doing he will satisfy the growing demand of discriminating automobilists. Automobile dealers throughout the country who wish to do as well by their prospective purchasers would advance their interests by specifying "CONTINENTAL TIRES" on the cars for next season's delivery.

## **The Continental Caoutchouc Co.**

EMIL GROSSMAN, General Manager

Factory: Hanover, Germany

43 Warren St., New York

WE WILL EXHIBIT at Madison Square Garden, New York, January 13-20, 1906, Space 147; 69th Regiment Armory, New York, January 13-20, 1906, room "I;" Coliseum, Chicago, February 3-10, 1906, spaces 274-278.

## **WE WIN—Because We Have the Goods**

### **Dodge Positive Force Feed Oilers**

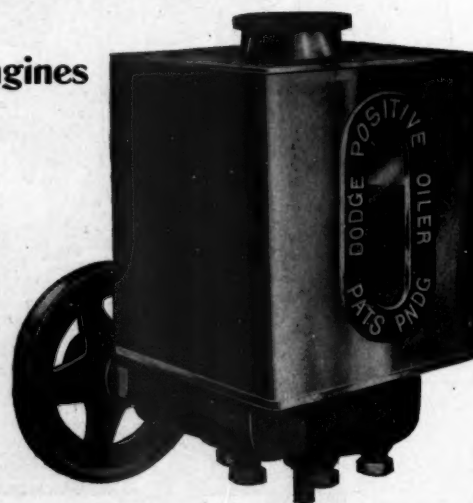
**For Automobiles,  
Stationary and Marine Engines**



Absolutely automatic, requires no attention. They are not eye servants, but can be absolutely relied upon in all weather and under all conditions. The greater the speed, the more oil is delivered to the parts; and when you stop, the flow of oil stops. No valves to open, no valves to close. No blue smoke, consequently no waste of oil.

Either pulley, ratchet or sprocket drive. Made in polished brass or iron.

SEND FOR CATALOGUE AND PRICE LIST



MANUFACTURED BY

## **DODGE LUBRICATOR CO., 36 Columbus Ave., Boston, Mass.**

National Sales Corporation, 256 Broadway, New York City, Factory Sales Agent.



# Northern

To be exhibited at the Madison Square Garden, N. Y., January 13 to 20, and at Chicago

Better than ever. Motor has been enlarged, affording 20 h. p., and with a wheel base increased to 106 inches and longer and heavier full elliptic springs it will fully sustain its reputation of being "the quietest and easiest running car in the world."

## OTHER NOTABLE IMPROVEMENTS

Brake pedal fitted with ratchet and pawl; pressed steel brake drums on rear wheels with external contracting brake bands lined with camel's hair belting three inches wide, affording an exceptionally large and efficient braking surface; bodies ironed for tops; improved catches on side entrance doors.

Write for Catalogue No. 14 and full information about

### 1906 MODELS

7 h. p. Sturdy Northern Runabout with lamp equipment . . . . .	\$ 650
20 h. p. two-cylinder car, with gas and oil lamp equipment . . . . .	1800
20 h. p. Limousine, with gas and oil lamp equipment . . . . .	2800
Model K, 30 h. p. four-cylinder car, with gas and oil lamp equipment . . . . .	3000



Silent Northern Touring Car, double side entrance, 4-inch tires, gas and oil lamp equipment

**NORTHERN MANUFACTURING CO., Detroit, U. S. A.**

Member Association of Licensed Automobile Manufacturers

Chicago Agents: KELLEY-HUNTER CO., 1449 Michigan Avenue

# MICHELIN

Go Faster—Last Longer

Why?

MORE PURE RUBBER  
EXCLUSIVE FABRIC  
SUPERIOR VULCANIZATION  
UNEQUALED WORKMANSHIP



**MICHELIN TIRE AMERICAN AGENCY, Inc.**

Telephones: 760-761 Madison Sq.

6 WEST 29TH STREET, NEW YORK

E. D. WINANS, Gen'l Mgr.

Branches in all large cities



**THE Maxwell**

PERFECTLY SIMPLE  
SIMPLY  
PERFECT

<b>16 H. P. Touring Car</b> <b>\$1,450</b>	<b>8 H. P. Tourabout</b> <b>\$780</b>
---	--

**THE CAR** that made a perfect score in the Glidden Tour—1,004 miles without a single adjustment. No car at less than twice the price made **AS GOOD** a record. No car **AT ANY PRICE** did better.

**THE CAR** that won a victory over all cars costing from one to two thousand dollars in the "Climb to the Clouds" at Mt. Washington. Unlike some contestants, we did not have to send three cars to get one up, but sent the **SAME** car up **THREE TIMES**.

**THE CAR** whose regular stock 8 H. P. Runabout type won the race at Long Branch August 19, making four miles in 5 min. 33 sec., and defeating cars listed at several times the price.

The automobile that has done these things **MUST** be worthy of your consideration. Look at as many cars as you please, but don't buy before seeing the Maxwell.

The agency field is filling fast. If you contemplate applying for a Maxwell agency, better do it now.

**MAXWELL-BRISCOE MOTOR CO.**  
TARRYTOWN, N. Y.

Central Western Representative: <b>A. F. CHASE.</b> Foreign Representatives, (except Canada and Mexico) <b>RICHARD IRVIN &amp; CO.,</b> 25 Broad St., New York City.	Members of American Motor Car Manufacturers' Association. Agents in Principal Cities.	New York Agents: <b>MAXWELL-BRISCOE, INC.</b>
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# The Jackson

<b>Model C</b>	Two-cylinder, under-the-body, 20-24 H. P.	<b>\$1250</b>
<b>Model D</b>	Two-cylinder, transversely, Under-the-hood 20-24 H. P.	<b>\$1500</b>
<b>Model G</b>	Four-cylinder, 40-45 H. P.	<b>\$2500</b>

Touring  
Cars

**Will be exhibited at the New York Automobile Show, 69th Regiment Armory, Jan. 13-20th**

**"NO SAND TOO DEEP—NO HILL TOO STEEP"**



# Why Goodyear Detachable Auto Tires Won't Rim Cut

WHEN an Auto Tire gets rim-cut, it's time to feel for your pocket-book and ask yourself, "What tire shall I get next time?"

For a rim-cut tire is pretty near its finish. And the chances are ten to one that if you are forced to ride around the block on a deflated ordinary tire with ordinary rims your tire will be rim cut before you get there. Because ordinary rims are just like a dull jack-knife.



Fig. 1



Fig. 2



Fig. 3

like Fig. 1 you couldn't do it, because your strength would not be great enough. But if you



Fig. 4

take the strap like Fig. 2, with a little sawing you can cut it. That's exactly the

way the ordinary rim cuts the ordinary tire. When the tire is inflated, like Fig. 3, even the tremendous weight of the car is not sufficient to cause the rim



Fig. 5

Now look at the picture of the Goodyear Auto Tire on the Goodyear Universal Rim (Fig. 5.) The portion of the rim against which the tire rests forms the arc of a large circle. That rim can



Fig. 6

no more cut the tire than you could have cut the strap by using the handle of the knife instead of the blade. Notice the edge of the ordinary rim used with ordinary tires (made into a circle), in Fig. 6, and compare with the Goodyear Universal Rim, used with Goodyear Auto Tires (Fig. 7.) Then you can see more clearly what we mean.

We (and others) have ridden the Goodyear Auto Tire on Universal Rims absolutely flat for 25 miles on rough roads without serious injury to the tire. We have the evidence if you would like to see it.

This is only one reason why wise riders are specifying Goodyear Auto Tires on Universal Rims for their new cars. Our "Good News Book" gives ALL the reasons. It is intensely interesting to Manufacturers, Dealers and Riders seeking relief from tire troubles.



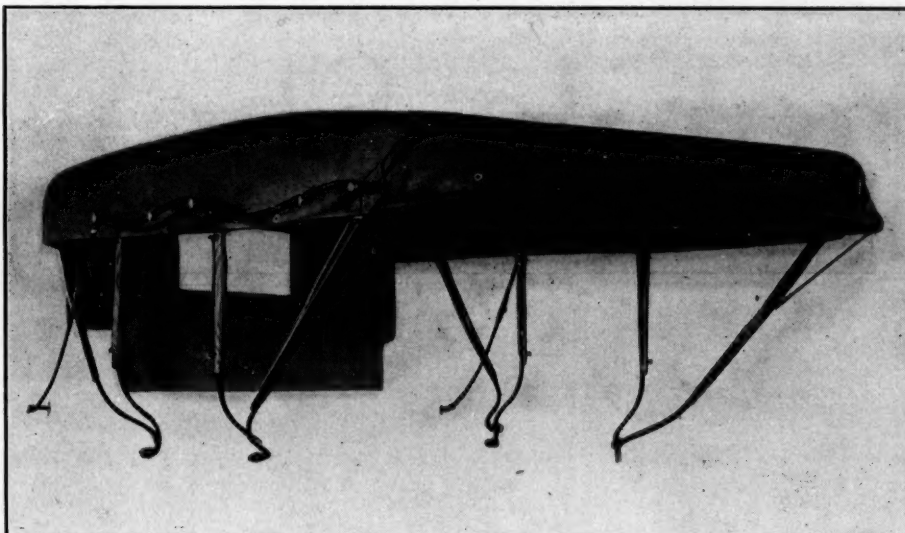
Fig. 7

**THE GOODYEAR TIRE & RUBBER COMPANY, Wallace Street, Akron, Ohio.**

Branches in following cities: Boston, 6 Merrimac St.; New York, 259 W. 47th St.; Chicago, 110 Lake St.; Cincinnati, 242 E. Fifth St.; St. Louis, 712-714 Morgan St.; Cleveland, 69 Frankfort St.; Philadelphia, 1521 Spring St.; San Francisco, Geo. P. Moore & Co., 698 Golden Gate Ave.; Buffalo, 719 Main St.; Denver, 220 Sixteenth St.; Detroit, 242 Jefferson Ave.

**We furnish ALL SIZES of Tires with BAILEY TREADS, if desired**

## THE SPRAGUE AUTO TOPS



**THE SPRAGUE IDEA—MADE THE SPRAGUE WAY**

### Our New Top

See the curved irons on the bows. This is the only right way to make the bows; they are straight on the lower ends. The drop forgings will stay in place, and they make a neat substantial job. See them at the shows.

**THE SPRAGUE UMBRELLA CO., Norwalk, O.**

### COL. SPRAGUE'S EXHIBIT AT THE SHOWS

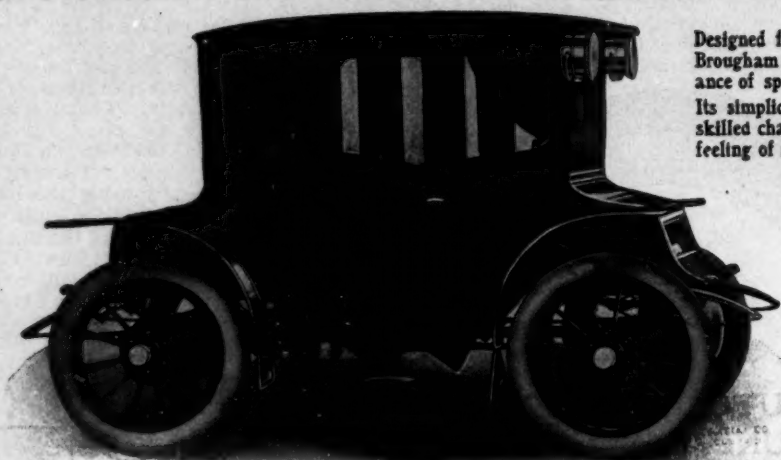
At Madison Square Garden  
Space No. 168 Concert Hall

At 69th Street Armory  
Space 54 Gallery

At Chicago Show  
Space 140 Gallery

*Send for our catalogue*

# The Baker Electric Brougham



Designed for private use in the cities, this vehicle is the lightest Brougham made, yet extremely durable and efficient. It has an abundance of speed and ample power for hill climbing.

Its simplicity of operation renders unnecessary the employment of a skilled chauffeur, while its absolute ease of control gives a confident feeling of safety much to be desired.

The **BAKER** Brougham comfortably seats four persons, with ample room for the manipulation of steering and control levers.

The mechanical excellence of its construction, combined with the use of most carefully selected materials throughout, assure to **BAKER** owners a freedom from breakdowns and mechanical troubles sure to be appreciated.

The finish and upholstery of all **BAKER** Electrics are done by hand, only the most skillful labor being employed. About these

## ARISTOCRATS OF MOTORDOM

there is an air of rich elegance and dainty refinement that distinguishes them and adds a certain charm to their possession.

We Manufacture Imperials, Stanhopes, Surreys, Depot Carriages, Broughams Interior and Exterior Driven

Agencies located in the large cities. We have a few important cities not yet covered. Write for particulars.

# The Baker Motor Vehicle Co.

24 JESSIE STREET

CLEVELAND, O.

# SIXTH NATIONAL Automobile Show

AT

## Madison Square Garden

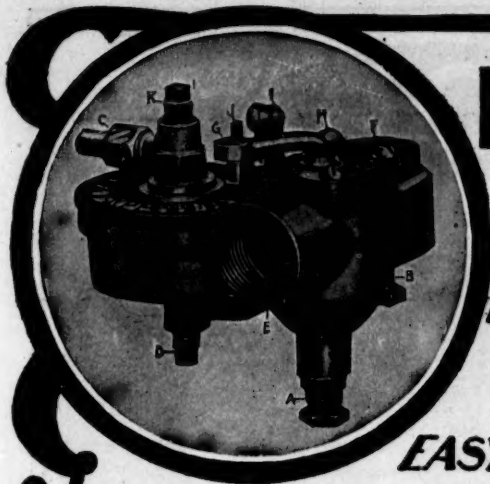
NEW YORK

## JANUARY. 13th to 20th, 1906

JAMES C. YOUNG, Manager

**SPECIAL NOTICE.** The trade admitted free up to 1 o'clock each day upon presentation of business card and registering name and address at the *Bureau of Information*





# KINGSTON

## 1906 TYPE-K- AUTOMATIC CARBURETOR

*EASY TO UNDERSTAND EASY TO OPERATE*

Fuel controlled entirely by equalizing automatic air valves.

Will increase **POWER** and **CONTROL** of any 1905 FORD or OLDS car, or money back.

Positively will not accumulate fuel in, or **CLOG LONG INLET PIPES**.

Perfectly adapted to gasoline cars, boats, airships and motors for any kind of service.

Built for business by the oldest manufacturers in the business.

OVER 31,000 KINGSTON CARBURETORS IN USE

### KINGSTON MUFFLER



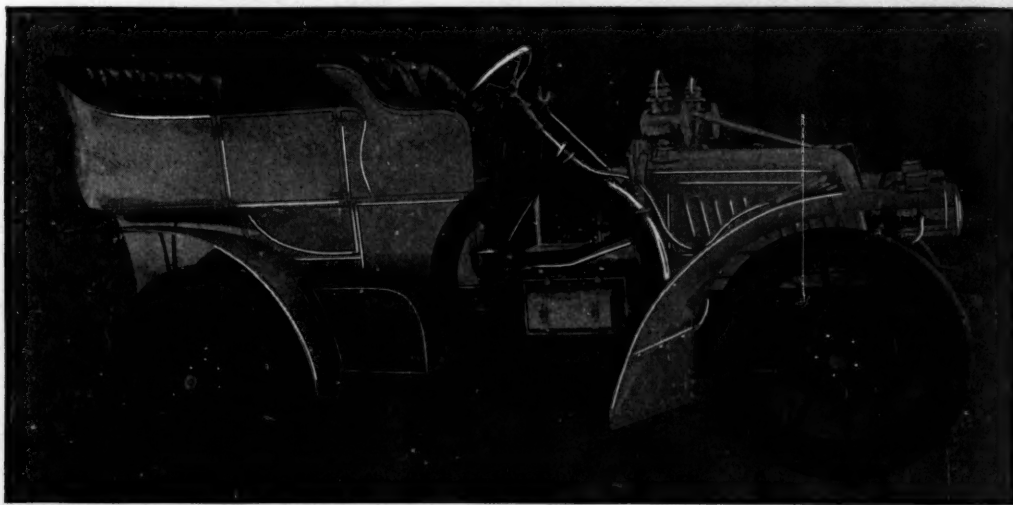
**IMPROVED  
FOR 1906**

BYRNE, KINGSTON & CO.,

KOKOMO, INDIANA, U. S. A.

# WORTHINGTON AUTOMOBILE COMPANY

547 Fifth Avenue New York City



## 24 h. p. Berg Touring Car

**IMMEDIATE DELIVERY**

**MEMBERS A. L. A. M.**

*When Writing to Advertisers, Please Mention Motor Age.*

## The Connecting Link BETWEEN HOME AND OFFICE

Isn't it significant that most men who can afford more than one motor car own a **Pope-Waverley Electric**? The reason is simple. Without cranking, oiling or soiling the gloves, it starts right off in any weather. No water to freeze up, **always ready**, simple and safe. It is in a class by itself—an ideal about-town carriage for the trip to and from the office, the theater, the shopping tour, calling, or the spin to the suburbs or the country club.

We make Runabouts, Surreys, Stanhopes, Chelseas, Physicians' Road, Station and Delivery Wagons. Also trucks on specifications. Write us for our complete catalogue.

Be sure the name "POPE" is on your automobile.

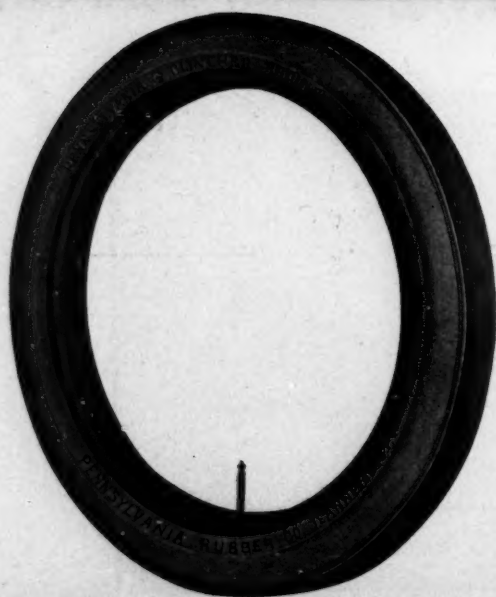
We exhibit in New York at  
Madison Square Garden only.



**POPE MOTOR CAR COMPANY, Indianapolis, Ind.**

New York City, 1733 Broadway    Boston, Mass., 223 Columbus Ave.    Washington, D. C., 819-14th St., N. W.    San Francisco, Cal., 451 Mission St.

# PENNSYLVANIA CLINCHER



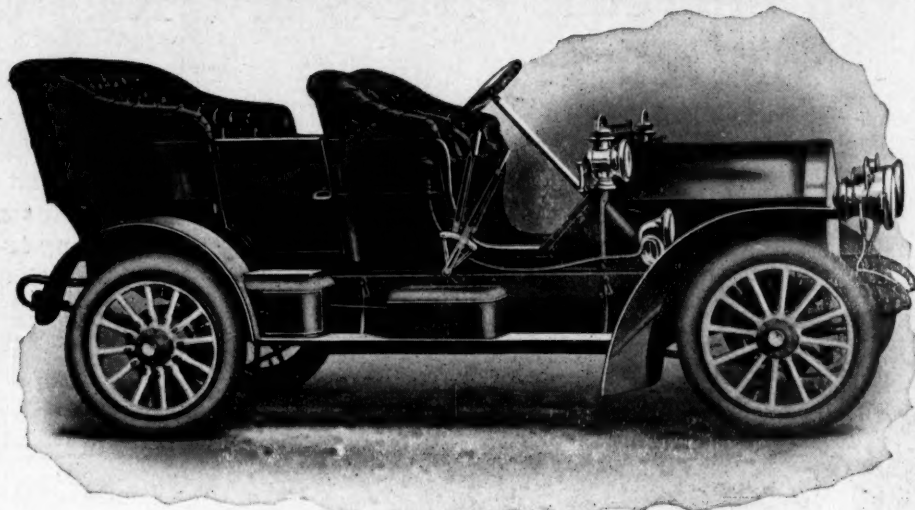
The flat-tread racing type will  
be exhibited for the first time  
at the New York Shows.

## PENNSYLVANIA RUBBER CO. JEANNETTE, PA.

*When Writing to Advertisers, Please Mention Motor Age.*



# WATERLESS KNOX



## 4-Cylinder, Model G

The Pioneer Builders  
of Air-cooled cars

Present Model G the most satisfactorily cooled automobile ever made. It is also

### THE HIGHEST OF ALL HIGH-GRADE CARS

Exceptionally roomy and luxurious, ample power and speed maintained under all conditions of weather and roads.

Fitted with either tonneau or limousine bodies.

35-40 H. P. Price \$4,000.

We shall exhibit at Madison Square Garden only in New York January 13th to 20th, our full line of four-cylinder and two-cylinder pleasure cars; also a large line of gasoline commercial cars.

## KNOX AUTOMOBILE CO. Springfield, Mass.

Members Association Licensed Automobile Manufacturers.

# MODERN COMMERCIAL CARS

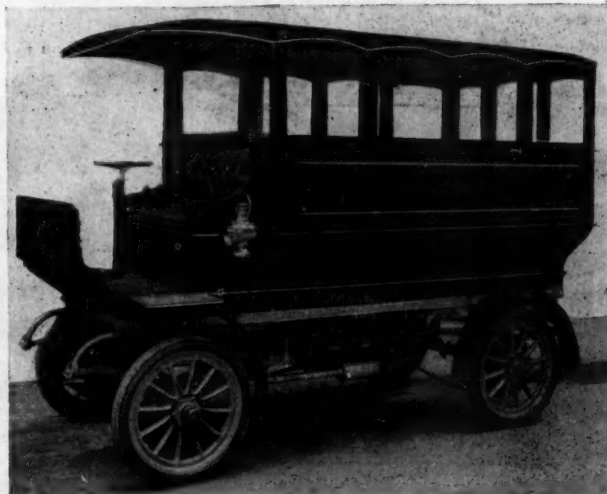
"BUILT FOR BUSINESS AND PLEASURE"

Trucks, Delivery Wagons, Omnibusses, Sight-Seeing Cars



3-Ton Gasoline Truck

GASOLINE  
AND  
ELECTRIC



14-Passenger Hotel Bus

Look for the 1906 Models at our exhibit at the Armory Show. They exemplify the highest type of modern Commercial Car construction. Our 4-cylinder 16-passenger gasoline will be in operation during the week of the show for the convenience of visiting agents and parties interested, absolutely free.

## THE AUTO-CAR EQUIPMENT COMPANY, Mfrs.

BUFFALO, NEW YORK

ITS PATENT  
FRICTION DRIVE

**THE LAMBERT**

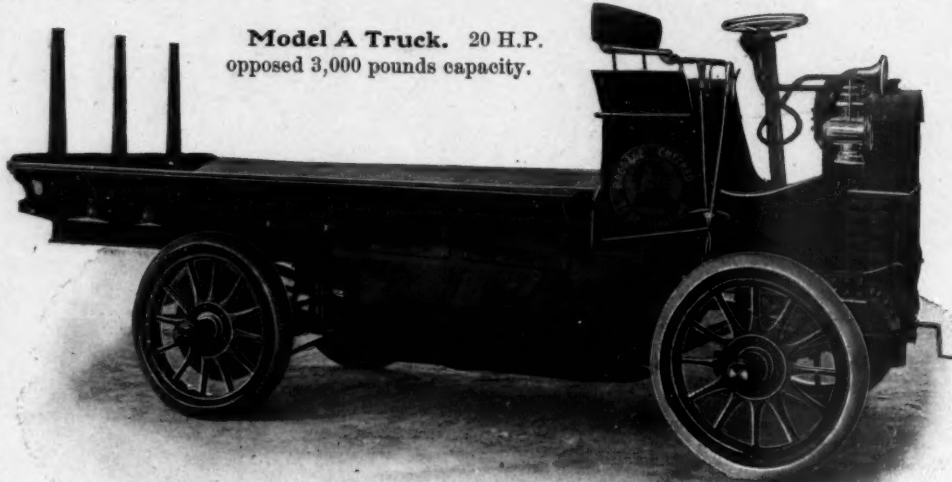
ITS PATENT  
FRICTION DRIVE

## Our Line of Commercial Trucks are Ready for Delivery.

Guaranteed for One Year. Simplicity of Construction one of the prime features. Built for Service

Write us for our Illustrated Catalogue describing six models in pleasure cars and our line of commercial vehicles.

Model A Truck. 20 H.P. opposed 3,000 pounds capacity.



We manufacture two models in Trucks. Our Model B Truck has a carrying capacity of 1500 pounds, and is strictly a high class light delivery car.

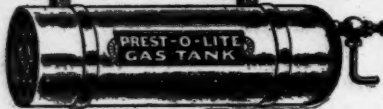
Be sure and see these trucks at New York Show 69th Regiment Armory.

**THE BUCKEYE MANUFACTURING CO., Anderson, Indiana**

Members American Motor Car Manufacturers' Association, Chicago

## PREST-O-LITE GAS TANK

No Waste.  
No Odor.  
No Attention.  
Tips Never Clog.  
Nothing to Freeze.



SIMPLE ENOUGH

When you want gas, turn it on. When you don't, turn it off.

**NEVER AFFECTED BY EXTREME COLD**

¶ In using Generators much time is lost in cleaning and charging them and then waiting for enough gas to give the necessary light.

¶ With the Prest-O-Lite Gas Tank the pure, dry, dustless gas is always ready for the match.

**ALWAYS READY FOR SERVICE**

No time lost      No inconvenience      Write for booklet

**PREST-O-LITE CO., - Indianapolis, Ind.**

Exclusive Licensees under patents of the Commercial Acetylene Co.

AGENTS IN MOST CITIES.      ::      WE WANT THEM IN ALL

## Carpenter Nickel=Chrome Steels.



Crankshafts and Axles forged only in Slab Form, slotted and finished to size; then oil treated in our Projectile Department. Shafts and Axles thus made of our No. 1 AUTONICKEL—CHROME-STEEL average:

Tensile Strength,	130,000 lbs.
Elastic Limit,	114,000 lbs.
Elongation	19 per cent
Reduction of Area	60 per cent

**SPECIAL ALLOYED STEELS**

FOR

**GEARS, SPRINGS, VALVES, FORGINGS, ETC.**

**THE CARPENTER STEEL COMPANY**

Works: Reading, Pa

New York Office: 1 Broadway.



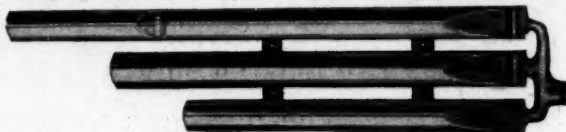
# GABRIEL HORNS



Automobilists everywhere are unstinted in their praise of the Gabriel Horn. The erstwhile fog-horn is being discarded and in its place the Gabriel has come to stay. Its tone is a Beautifully Modulated Chime, is superior in volume and range to anything yet produced. It gives a tone of distinction to the automobile that appeals to all.

Can be heard distinctly above the loudest din for a mile or more. It is extremely penetrating, but never discordant and warns without frightening.

Attached to the exhaust of your machine, its volume and range are as great under one pound pressure as one hundred. Made of brass, beautifully polished and



lacquered to prevent tarnishing, it needs no burnishing, but can be cleaned with a brush.

Works with a foot lever, no reeds or bulbs to break, always ready and needs no repairing. Defies wear and tear. Saves time and money.

Have you heard our eight chime horn? An octave on which you can play any tune. When purchasing be sure the horn has our trade mark.

The Gabriel Horn will be on exhibition at the New York Automobile Show, Madison Square Garden and No. 20 69th Regiment Armory.

Write for prices and information.

**GABRIEL HORN MFG. COMPANY**

976 Hamilton Street, CLEVELAND, OHIO  
New York representative, 148 W. 56th St.



# DON'T BE SHOCKED

ONLY \$30.00

## Foster Shock Absorbers



insure the Automobilists absolute comfort and safety—at the highest speed on the rockiest road.

Our Shock Absorbers retard all motion going Up not going Up and Down—the Automobile has springs for the purpose of retarding the motion going Down.

They are economical, simple, compact, substantial, weighing only 2½ lbs., adjustable in every direction and can be set on any machine manufactured.

MANUFACTURED BY

**GABRIEL HORN MFG. CO.**  
976 HAMILTON ST. CLEVELAND, O.

"THE OLD  
SHOW  
IN THE  
NEW ARMORY."

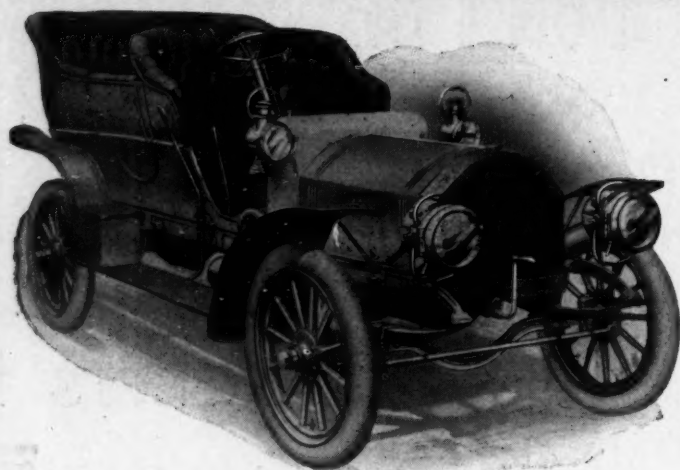


**S I X T H A N N U A L**  
**Automobile Show**  
OF THE  
**Automobile Club of America**  
**Sixty-Ninth Regiment New Armory**  
**Twenty-Sixth Street, Near Fourth Avenue**



**THE OPEN  
EXPOSITION  
OF A  
GREAT INDUSTRY**

**NEW YORK CITY**  
**January 13 to 20, 1906**  
**Leading American and Foreign Exhibitors**  
**Gasoline—Steam—Electricity**



Again—"As good as it looks"

## Stoddard-Dayton

MODEL D

### Touring Car

An American car for American roads.

When we designed the Stoddard-Dayton we did it with the knowledge that its career was not to be confined to polished boulevards and graded driveways.

We knew that there were certain conditions in American roadways to be met—if your touring car is really to *tour*—and to *keep touring*.

And the Stoddard-Dayton is "built for that purpose."

It is continually proving its ability to travel under the most unfavorable conditions.

The Stoddard-Dayton 1906 Model D Touring Car is a motor greyhound—possessing dependable strength without ponderous bulk.

Its frame is made of hot-rolled, high carbon, pressed steel, the corner plates are parts of the cross members, insuring perfect rigidity; all members are formed cold, and hot-riveted. The springs are semi-elliptic, of special design, 40-inch rear and 38-inch front. All weight is perfectly distributed and carried upon roller bearings.

Special type of 4½x5 in. 4-cylinder motor; water-cooled; sliding gear transmission; change gear lever is on same shaft as emergency brake lever and is of selective type, enabling the driver to change from high to intermediate, or vice versa, at speed of 25 miles, without clashing or noise, up hill or down; all parts accessible for adjustment. Mechanical lubrication; 30-35 horse power. Proportion of power to weight, one horse power to every sixty pounds. Wheels—artillery, 32x4, roller bearings; 12-spoke, front, 14-spoke, rear. \$2,250. Immediate delivery.

Let us send you our 1906 catalogue, describing the new Stoddard-Dayton car in detail. Mailed free for the asking.

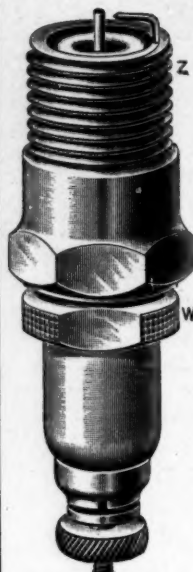
## The Dayton Motor Car Co.

DAYTON, OHIO

#### AGENCIES IN THE FOLLOWING CITIES:

McDuffee Automobile Co., 1449 Michigan Avenue, Chicago; Stoddard-Dayton Agency, 1853 Broadway, New York; Hamilton Automobile Co., 206 North Broad, Philadelphia; Central Automobile Co., 5989 Centre Avenue, Pittsburgh; J. A. Cramer, 737 Main Street, Buffalo; Randall Motor Car Co., 24 Columbus Avenue, Boston; Colonial Automobile Co., 3944 Olive Street, St. Louis; Deright Automobile Co., Omaha; H. S. Moore, 100 Crawford Road, Cleveland; Automobile and Supply Co., 24 Temperance Street, Toronto; Norman W. Church, Hellman Building, Los Angeles, Cal.; Haynes Automobile Co., 220 South 6th Street, Minneapolis; C. M. Wood, Denver; Fisher Automobile Co., 330 North Illinois Street, Indianapolis.

## "SOOT-PROOF" PLUG



The most economical plug on the market, because it lasts so long.

### The Spark Always Jumps

No amount of carbon can make it short circuit.

The porcelain is large, strong and non-absorbent, and cannot break under a temperature of 2,500 degrees.

No knowledge needed for repairs. All parts interchangeable.

Beware of infringed imitations.

Write for free treatise telling how to correct and avoid electrical equipment troubles of gasoline motor cars.

### It Was Real Merit

that made the "Soot-Proof" Spark Plugs win the McMurtry Medal in the Six-Day National Economy Contest.

*Ninety per cent of all contests won in America were won by cars using "SOOT-PROOF" Plugs.*

Specify them when ordering cars. It will save you trouble. Imitations? Sure, but that's flattery.

Indestructible ..... \$2.00  
Regular..... 1.50

**Guaranteed**

**Your Jobber Has Them**

**C. A. MEZGER, Inc.,**  
203 W. 80th St., New York

**National Sales Corporation,**  
Factory Sales Managers 256 Broadway, N. Y.



# The Autocar

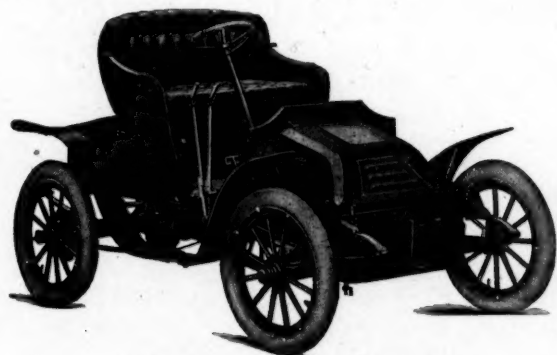
## Two types for 1906



**Type XII—\$2600**

The Autocar Factory will produce two models during 1906: A modern-to-the-minute, five-passenger tourer of extraordinary car-power and buoyancy; and the widely-known Autocar Runabout—power increased, and control changed from left-hand lever steer with spark and throttle levers, to right-hand wheel steer with spark and throttle control grips in the rim of wheel.

The Autocar New Type XII is the biggest, broadest and most powerful car ever produced in The Autocar Factory. Four-cylinder, vertical motor; water-cooled; 24 James Watt horsepower. Sliding-gear transmission; three forward speeds and reverse. Shaft drive. Internal and external hub brakes. Characteristic Autocar control—right-hand wheel steer, with spark and throttle control grips in rim of wheel. Satisfying in looks, luxury, speed and performance, and moderate in price. . . . . **\$2600**



**Type X—\$1000**

The Autocar Runabout has 12 James Watt horsepower, two-cylinder horizontal opposed motor, in front; it has shaft drive with sliding-gear transmission—three forward speeds and reverse. That it is the best Runabout built has long been a settled fact. It is distinguished as being the first and only motor-car which is **STANDARDIZED**.

**The Autocar Co. ARDMORE, PA.**

Member Association of Licensed Automobile Manufacturers

Exhibits in New York at Madison Square Garden Only

# Reliability

THE INCOMPARABLE

# WHITE

THE CAR FOR SERVICE



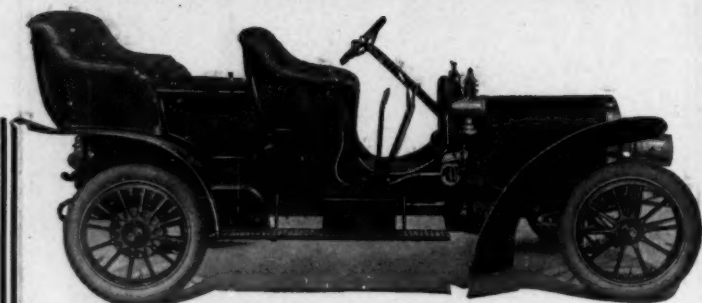
## NEW WHITE CATALOG

There has been just issued a new catalog of the White steam car which we believe will prove of interest to all motorists, actual and prospective. The catalog comprises a brief historical sketch, tracing the development of steam machinery; a concise and lucid description of the White system; references to the continuous successes of White cars, commencing in 1901; and full specifications, prices, etc. of the Model "F" side-entrance White cars, of which we can make immediate deliveries, touring cars, victorias, limousines, runabouts, landaulets and extension landaulets. The catalog is printed in three colors and is handsomely illustrated. Sent free upon request.

We will exhibit at the Armory show  
in New York.

**WHITE SEWING MACHINE COMPANY**  
CLEVELAND, OHIO

# THE MARION



## A Brief Digest of "Model Five"

We do not claim that the Marion is the only car with power enough to climb hills and go at a fast clip when desired.

But we do claim that the Marion combines reserve power—and more of it than would often be used—with a simpler construction than other cars, more easily and thoroughly understood and cared for by the man who wants to drive his own car and more certain to be durable under long strain and hard usage.

A woman can handle the Marion, start it easily, stop it quickly and steer it with absolute safety at high speed—and it is as fast as the speediest.

The Marion proportion of 1 horsepower to every 75 pounds of weight (28 horsepower: 2,100 lbs. weight), has been worked out to fit average roads, climb mountains with ease and safety, and yet permit liberal dimensions and unusual strength of parts.

The two sets of brakes are independent of other mechanism. The double chain drive (direct to the spokes) is noiseless in a degree not found in any other car. The car as a whole is light, flexible and easy on tires. Full elliptic springs, yet has a low, graceful build and 10 inches of road clearance. Rides with exceptional comfort and seats five people.

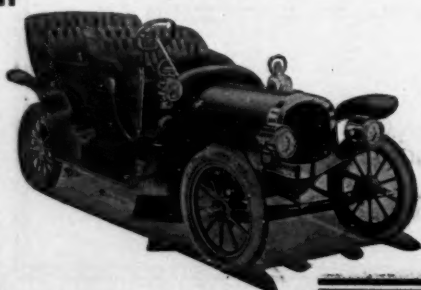
Marion four-cylinder air-cooled engine, with double fan and large exhaust, multiple disc clutch and sliding gear transmission. Three speeds forward and reverse. Spark and throttle levers in wheel.

We will be glad to send catalogue or a car for demonstration, or both. Give us the word.

Four	{	Model Five—28 H. P. Touring Car, \$2,500
Cylinder		Model Two—16 H. P. Touring Car, \$1,500
Air Cooled		Model Four—16 H. P. Physicians' Runabout, \$1,200

**MARION CAR COMPANY** INDIANAPOLIS INDIANA

A Few Agencies in good markets still open



SPACE A4  
AT  
NEW YORK  
ARMORY  
SHOW



## A ONE CURE TIRE With Wrapped Tread

LONG SOUGHT  
SUCCESSFULLY ACHIEVED

1906

**Hartford DUNLOP  
CLINCHER Tires**

Will be so produced at

**ONE VULGANIZATION**

Both types will fit

**The Hartford Universal Rim**

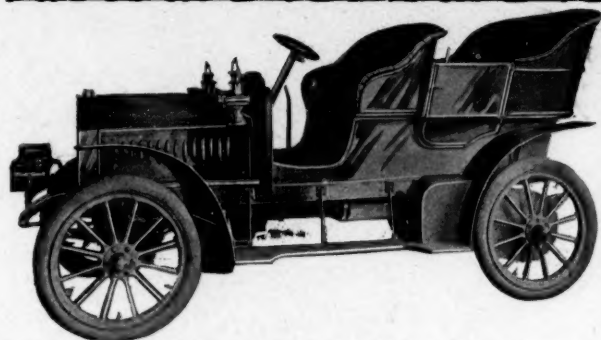
**The Hartford  
Rubber Works Company**

Hartford ... Conn.





# THE 1906 CRAWFORD TOURING CAR



**FINEST CAR IN THE WORLD AT**

## \$2000

**A Perfect Car at a Popular Price  
SPECIFICATIONS COMPLETE**

**MOTOR:** Four-cylinder, upright, water-cooled,  $4\frac{1}{2}$  by  $4\frac{1}{2}$  individual cylinders. 24-28 Horsepower.

**CRANK SHAFT:** Four throw, bearing in five bronze bushings aggregating  $14\frac{1}{2}$  inches.

**CRANK CASE:** Removable without disturbing adjustments.

**WHEEL BASE:** 100 inches; tread 56 inches.

**WHEELS:** 34-inch, wood, artillery type, on large ball bearings.

**TIRES:** Optional; regular clincher or mechanically attached.

**DRIVE:** Double chain on generous-sized sprockets.

**TRANSMISSION:** Selective sliding gear set, three forward speeds, one lever control, ball bearings.

**BEARINGS:** Ball bearings throughout.

**BRAKES:** Two powerful brakes on rear hub, with set lever. Two band brakes operated by foot on cross shafts.

**LUBRICATION:** Force feed lubricator.

**FRAME:** Deep section pressed steel sides, with an angle iron sub frame brazed up to carry motor and transmission, which are connected by double universal joint.

**CLUTCH:** Of inverted type, made dust-proof by leather diaphragm and operated by foot lever.

**IGNITION:** Jump spark, with four coils on dash.

**CONTROL:** Throttle and spark.

**SPEED:** 36 miles, approximate maximum.

**WEIGHT:** 2100 lbs.  
**TANK CAPACITY:** 14 gallons.

**STEERING GEAR:** Wheel and pinion.

**AXLES:** Large sized tubing.

SEE US  
at the  
A. C. A. SHOW  
in 69th Reg. Armory  
NEW YORK

CORRESPONDENCE SOLICITED

**Crawford Automobile Co.**  
HAGERSTOWN, MD.

The Simplest Engine  
in the World

# THE TWO-CYCLE ELMORE



When you understand that the two-cycle Elmore engine does away with 18 to 20 parts on each of the four cylinders; and absolutely eliminates all inlet and exhaust valves, with their attendant mechanism, you'll agree with us, won't you, that this is the simplest engine in the world?

Do we need to point out that this also reduces the cost of operation and upkeep to the minimum and makes the Elmore the most economical as well as the simplest of engines in the world?

From whatever standpoint you examine the two-cycle Elmore, equally impressive and sensational features present themselves. The four-cylinder car produces approximately as much power as would eight cylinders of the four-cycle type—produces it in a continuous and unbroken application that will carry the car indefinitely on the high speed under any and all road-conditions.

Again—it is the most successful self-starting engine in the world. Again—you can cut out one, two or three cylinders at will, both spark and gasoline. With one cylinder cut out the difference is imperceptible except in speed; with two out—barely noticeable. Do you see the economy of this?

Again—you can throttle the Elmore engine on the high speed down to two miles an hour. Again—the Elmore will take a 16 per cent grade on the high speed with approximately as much ease as it travels on the level road.

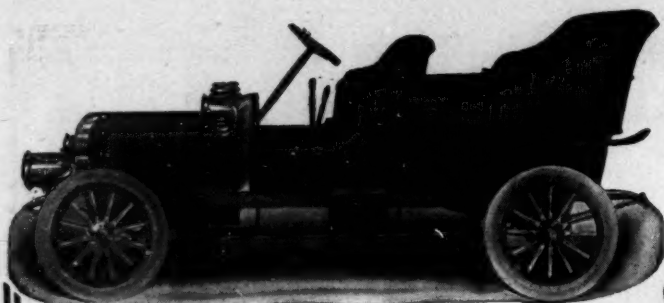
It starts with a smooth, gliding motion that is delightful; and dips down and over uneven spots with a minimum of jolt or jar.

The four-cylinder Elmore at \$2,500.00 and the two-cylinder Elmore at \$1,500.00 are two cars whose manifold exclusive features demand your most serious consideration. Learn all the wonders of the two-cycle type by getting in touch with the nearest Elmore agent or by writing for our new descriptive catalogue and books of information.

## The Elmore Mfg. Co.

804 Amanda Street, Clyde, Ohio

MEMBERS A. I. A. M.



*The car of to-day, to-morrow and for years to come.  
Built by practical men.—*

# Aerocar

The one motor car driven by a reliable, test-proven air-cooled motor.

The motor car is not an every day purchase. It costs considerable money, and if it does not run satisfactorily it is of little value.

There must be a good motor to make a good automobile. Water-cooled motors have many troubles—the perfect water-cooled motor has yet to come.

The perfect Air-cooled motor is here. It is the air-cooled motor of the Aerocar.

This statement is based on the records made in severe, practical tests covering more than eight years—and now secure in its perfect operation it demands the earnest attention of present and coming motorists.

Because of its wonderful efficiency in power; because of the saving in weight; because of simplicity and strength in mechanical construction; because of its uniformly smooth working—runs steady with the rhythm of an electric dynamo; because it is the same reliable sure-working motor under all climatic conditions—midsummer or midwinter makes no difference, there's nothing to freeze nor nothing to thaw—because of ease of control, economy of maintenance; because it will develop continuous higher power, for weight, and give greater speed than any other motor; because of its assured reliability and greater durability of service.

Such is the air-cooled motor of the Aerocar—it will not disappoint your highest expectations.

The body of the Aerocar compares most favorably with any other automobile, either foreign or American. It embodies the best features of each, is graceful in design, is most comfortably roomy, is luxuriously upholstered, and finished along the strictly high standard of up-to-date demands.

We courteously ask the opportunity to give a practical demonstration of the superiority, in every way, of the Aerocar. Try before you buy. Know why before you put money in a motor car.

Aerocar 1906. 24 h. p. Four cylinders. Five passengers. 45 miles an hour. 104 inch wheel base. Shaft drive. Sliding gear transmission. Three speeds forward and reverse. Leather-faced cone clutch. Hollow steel dash. Four sight lubricator on dash. Tool box on running board. 34x4 tires. 9-inch road clearance. Weight 2,000 pounds. Fully equipped, ready for the road, including two large glass headlights, \$2,800 f. o. b. Detroit.

Will be exhibited and demonstrated at the Automobile Shows in New York and Chicago.

The dealer who has the selling agency for the Aerocar will have a gold mine. Territory being rapidly taken up. If interested write us promptly.



**The Aerocar Company**  
Detroit, Michigan



Get out of a car not equipped with

## SUPPLEMENTARY SPIRAL SPRINGS

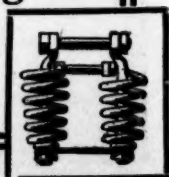
and into one that IS if you want to experience a new delight in motoring. The motorist who tries them for the first time is surprised at the total absence of jolts, jars, bumps and vibration of every kind.

They save your car, your engine, your back and your tires. Every automobilist knows the value of this type of economy, and then comfort is worth a great deal.

WRITE TODAY FOR FULL PARTICULARS

**Supplementary Spiral Spring Co.**

4527 Delmar Avenue  
ST. LOUIS, MISSOURI





# National RELIABILITY

Was demonstrated in the most convincing manner at Indianapolis, on Nov. 16-17, 1905, when a **National Stock Car** made

**1094 3-16 MILES IN 24 HOURS**

**Breaking the World's Record by 78 9-16 Miles**

At the  
**NEW YORK  
SHOW**

69th Regiment  
Armory

Jan. 13th to 20th



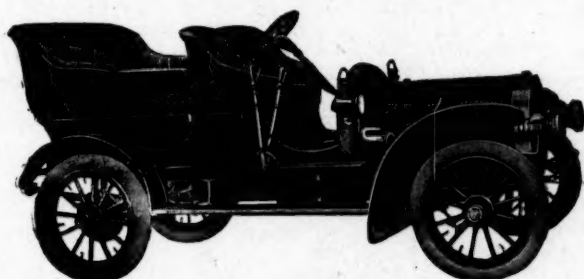
AND

At the  
**CHICAGO  
SHOW**

Coliseum

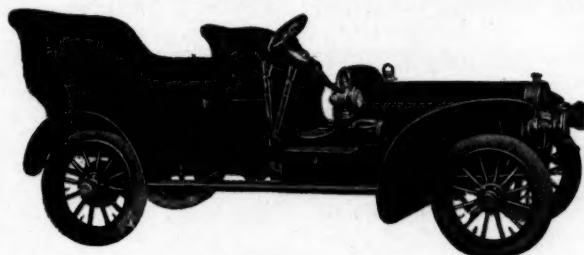
Spaces 77-78-79

Feb. 3d to 10th



NATIONAL MODEL D, 4-CYLINDER, 35-40 H. P. PRICE, \$3,000.

## The Car That Broke the World's Records



NATIONAL MODEL E, 6-CYLINDER, 50-60 H. P. PRICE, \$4,000.

## An Innovation in Touring Cars

Stylish, powerful, smooth running, easily controlled. Aluminum body, seats seven passengers. ALL FACING FORWARD.

*Write for particulars*

**NATIONAL MOTOR VEHICLE CO.**

1006 E. 22d St.

INDIANAPOLIS, IND.

DISTRIBUTORS—Linacott Motor Co., 163 Columbus Ave., Boston; Homan & Schulz Co., 38th & Broadway, New York; Ralph Temple Auto Co., 311 Michigan Ave., Chicago; Tioga Auto Co., Broad & Tioga Sts., Philadelphia; The Fisher Auto Co., 330 N. Illinois St., Indianapolis; Liberty Auto Co., 138 Beatty St., Pittsburgh; Colonial Auto Co., 3044 Olive St., St. Louis.

Members American Motor Car Manufacturers' Association, Chicago.

# Premier

## "The Quality Car"

(Air-Cooled)

### Decidedly the Season's Sensation

If orders are a criterion of desirability and value; if demand is an index to merit, the Premier for 1906 will meet with popular favor.

The car is not "freakish" in any sense, but is an elaboration of former fundamental Premier ideas, to meet the demand for a larger, more powerful, faster car.

It embodies a 20-24 H. P. motor, 4-cylinder, vertical, set longitudinally upon a pressed steel frame. Transmission of selective type, three speeds forward and reverse; shaft drive, bevel gear. Long wheel base, large wheels and tires, curved cast aluminum dash, sight feed precision oiler, full equipment of five handsome lamps, generator, and tube horn, together with full set of tools and tire repair outfit.

Body is of graceful tulip design, splendidly upholstered in best quality hand buffed, water grained leather, hair padded; comfortable, roomy tonneau, carrying five passengers without crowding; luxurious full elliptic springs with special shock absorbing head. It is a splendid, handsome looking car—one of the most ornate and artistic we have ever seen, and fully as good as it looks. Plenty of power, and all the speed you can use.

Two styles of touring car body on practically the same chassis, each offering phenomenal value.

\$2000.00 and \$2,250.00

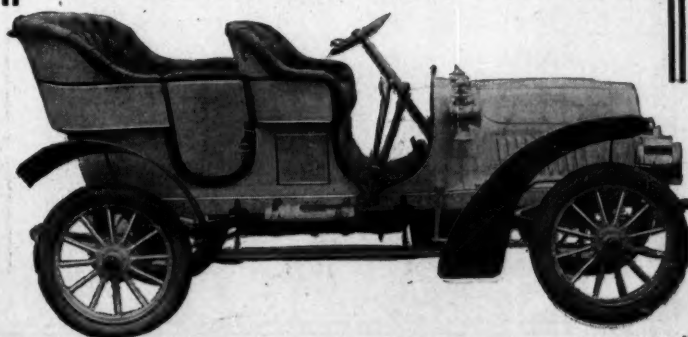
F. O. B. Indianapolis

*Send for Catalogue and Booklet (P)*

## Premier Motor Mfg. Co.

INDIANAPOLIS, IND.

Members American Motor Car Manufacturers' Association



# INDIANAPOLIS DUNLOP TIRE



**Open Steam Cured  
Fitted with Flap  
Wide Edges**

☞ This tire is fitted with a flap, which protects the air tube from screw heads in the rim and from moisture, and does away with the necessity of fabric-covered tubes. The special edges and the flap constrict against the channel of the rim in such a way as to prevent creeping. It is entirely open steam-cured, which gives the tire exceptional strength. For full information apply to any of the following addresses:

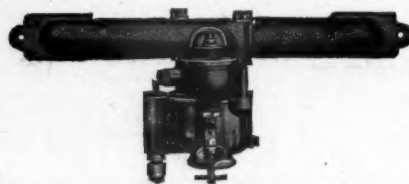
**INDIANAPOLIS,  
549 East Georgia Street**

CHICAGO	DENVER
429 Wabash Avenue	1528 Court Place
DETROIT	MINNEAPOLIS
247 Jefferson Avenue	21 South Second Street
BOSTON	SAN FRANCISCO
43 Columbus Avenue	327 Van Ness Avenue
BUFFALO	PORTLAND
9 West Huron Street	64 Sixth Street
CLEVELAND	LOS ANGELES
337 Huron Street	1038 South Main Street

# Holley Carburetors

will be used on the 1906 output of the following firms:

The Autocar Co., Ardmore, Pa.  
Blomstrom Motor Co., Detroit, Mich.  
Cadillac Motor Car Co. (four-cylinder), Detroit, Mich.  
Ford Motor Co., Detroit, Mich.  
Knox Automobile Co. (four-cylinder), Springfield, Mass.  
Marion Motor Car Co., Indianapolis, Ind.  
Mitchell Motor Car Co., Racine, Wis.  
The Nordyke & Marmon Co., Indianapolis, Ind.  
Olds Motor Works, Lansing, Mich.  
E. R. Thomas Motor Co., Buffalo, N. Y.  
Winton Motor Carriage Co., Cleveland, O.  
Welch Motor Car Co., Pontiac, Mich.



HOLLEY CARBURETORS are used in nearly every instance by the manufacturers of the cars they are advertised to fit. Can our competitors make this assertion? Below will be found a list of carburetors, especially designed to meet the requirements of the cars mentioned. We have a Heater Attachment ready to be placed on Ford "F" cars. It will greatly increase the efficiency during cold weather. **Price \$3.00**

## FORM A.

1902, '03 or '04 Oldsmobile runabout.....	\$12.00
1904 two cylinder Ford .....	11.00
Olds single cylinder Tonneau.....	11.50
Olds Touring runabout.....	11.50

## MODEL E.

1905 Winton models B and C.....	\$18.00
Single cylinder Cadillac .....	13.50
Two cylinder Buick .....	14.00
Single cylinder 8 H. P. Crest.....	13.00
10 and 12 H. P. four cylinder Franklin...	12.00
Two cylinder Queen Car.....	13.00
Single cylinder Northern .....	12.00
Two cylinder Autocar .....	14.00
Four cylinder Autocar .....	14.00

**HOLLEY BROS. CO.**  
DETROIT, MICH.



# GAS-AU-LEC

"THE SIMPLE CAR"



Elegant in Finish  
Luxurious in Appointments  
Built by Skilled Workmen from the best Materials Obtainable

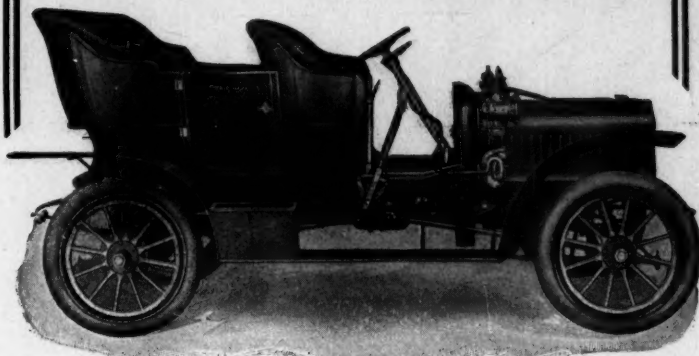
**The Simplest Gasolene Car in the World**  
—both as to construction and control, and the easiest to operate and maintain.

"Marks a New Era in Automobile Construction."

40-45 Horse Power, \$5,000

**Corwin Manufacturing Company**  
Peabody, Mass., U. S. A.

# MOLINE



**18-20 H.P. Model "C" \$1,750**

The smartest little four cylinder car in the market at the price.

**Other styles for 1906 are—**

**Model "A" 30-35 H. P. \$2500.00**

Same general type as Model "C" only larger and more luxurious.

**Model "C" 16 H. P. \$1000.00**

A most decidedly attractive double cylinder car for four or five passengers.

Full particulars of all three styles may be had by writing to us.

**Moline Automobile Company, East Moline, Ill.**

NEW YORK,  
Automobile Exchange and Storage Co.,  
133-139 West 38th St.

BOSTON,  
C. H. Saunders,  
"Motor Mart."

# LAST CALL

## JAN. 12th

That's the Date--when all

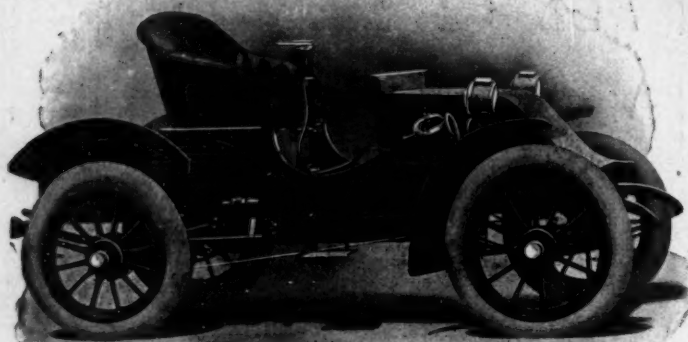
# COPY

for our Great New York Shows Number positively

# MUST BE IN

Send late Copy, Cuts and  
Instructions by Special Delivery

# MOTOR AGE



## ADAMS-FARWELL

The car with revolving air-cooled motor

If interested send for copies of letters received from those who have purchased 1904 and 1905 models. Now made in six models.

**Prices from \$2,000 to \$4,000**

Motors 20-25 h. p. and 40-45 h. p.

NO WATER      NO RADIATOR      NO FLYWHEEL  
NO FAN      NO MUFFLER

**THE ADAMS COMPANY, Dubuque, Iowa**

Chicago Salesroom, 1536 Michigan Avenue

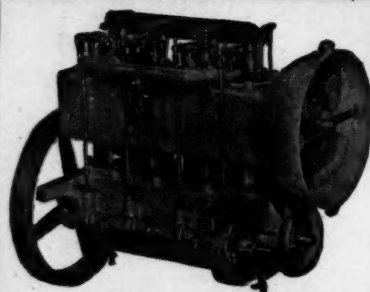
# WE HAVE IT

**Absolutely Tested**

by all kinds of Herculean Work

**Positively Proved**

by six months of faultless performance



Cylinders surrounded by Hood with Fan connection on water end, blowing a

**CONTINUOUS HURRICANE OF COLD AIR AROUND AND OVER TOP OF CYLINDERS**

Write for Description Particulars

# TREBERT

### THE DETAILS

15 H. P., developed at 1500 revolutions. Bore and stroke, 3 1/2 inches.

Length of Motor over all, 29 inches.

Crank Shaft diameter, 1 1/4 inches.

Total bearing surface on Crank Shaft, 10 1/4 inches.

Bearing on Connecting Rods, 2x1 1/4 inches.

Bearing on Wrist Pin, 1 1/4 x 1 1/4 inches.

Connecting Rods of drop forgings with phosphor bronze Crank Shaft.

Base and Crank Case of Aluminum.

Width of Motor from end of arm to end of arm, 18 1/4 inches.

Center of Crank Shaft to bottom of Motor, 4 1/4 inches.

Center of Crank Shaft to top of Motor, 18 inches.

Total Height of Motor from bottom of Crank Case to top of Exhaust Pipe, 22 inches.

Total Weight, 225 lbs.

Lubrication by Splash Feed and constant level automatic lubricator.

## TREBERT GAS ENGINE CO

BOTH AIR AND WATER-COOLED MOTORS FOR MARINE AND AUTOMOBILE PURPOSES  
BUILDERS OF TRANSMISSIONS AND CLUTCHES FOR LIGHT POWERED CARS REBUILT

REFERENCE: JOHN W. HAMMAR, NEW YORK

180 WEST MAIN STREET, ROCHESTER, N. Y.

THE

## Modern Car

**40-45 H. P. Double Chain Drive**

112-inch wheel base.

Individually cast cylinders. Battery and high tension magneto ignition.

Individually designed bodies.

**PRICE, \$7,500.00**

**28-32 H. P. Double Chain or Direct Drive**

102-inch wheel base.

Battery and low tension magneto ignition.

Bodies to your own taste.

**PRICE, \$4,000.00**

**U. S. sole representatives of Societe L'Oleo**  
plugs for battery and magneto ignition. Absolutely soot-proof.

## The Viqueot Company

LONG ISLAND CITY, N. Y.

## STEAM CAR SPECIALTIES

STRICTLY UP-TO-DATE

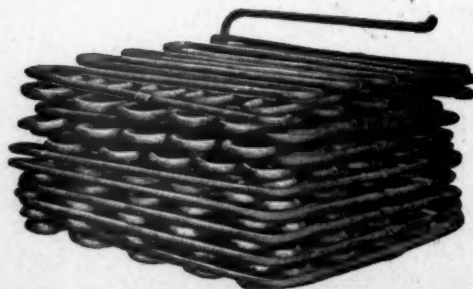


The only Flash Boiler with a reserve capacity. Condensers that condense. Burners that burn: either kerosene or gasoline. Single Acting Steam Engines, designed especially for superheated steam.

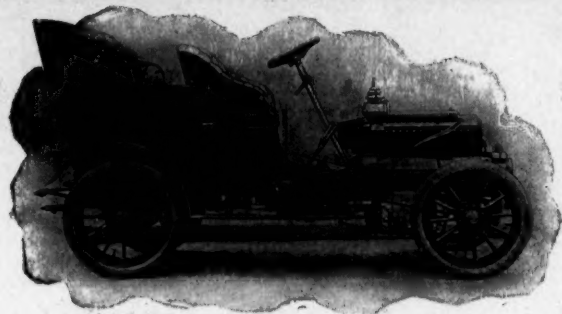
Everything for building an up-to-date steam car, or for remodeling your old one. Flash Boilers; any size.

## E. C. Walker Co.

1913-1923 LOGAN ST., LOUISVILLE, KY.







## Wolverine D

**Double-opposed Motor  
Under the Hood**

**Bevel Gear Drive**

**3-speed Sliding Gear  
Transmission**

**18 Horsepower (Actual)**

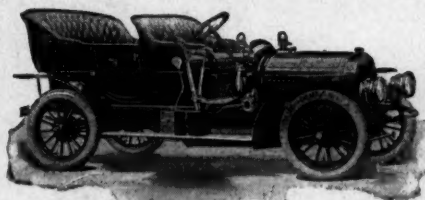
**Price, \$1,250.00**

**Wolverine Automobile and Commercial  
Vehicle Company**

Dept. "C."

Dundee, Mich.

## What Royal Tourist Owners are Writin'



"More pleased with Royal than any car I have ever owned. Have owned about 25, both foreign and American."

"Mine has run about 4900 miles this season, and has had absolutely no repairs."

"Since June 22d I have toured about 6000 miles and during this time I have never once stopped on the road to make a single repair or adjustment."

"The Royal Tourist which I purchased of you has run about 6000 miles, over hard country roads and sharp hills, and total cost of repairs will not exceed \$3.00."

"I have run this car about 6000 miles and have given it some hard usage. The expense for repairs has been \$3.25."

"Am delighted with my Royal. Have run it nearly 2000 miles and have had no repairs."

"We have been over 7500 miles at this date, without a repair or replacement of any kind or description, except to tires."

Ask any of our Agents to show you reproductions of letters from which these remarks were taken.

# ROYAL

**THE ROYAL MOTOR CAR CO.  
CLEVELAND, OHIO**

### AGENTS

C. A. Duerr & Co., New York, N. Y.; G. J. Dunham, Boston, Mass.; The McDuffee Automobile Co., Chicago, Ill.; G. W. Caplin, Minneapolis, Minn.; Automobile & Supply Co., Ltd., Toronto, Ont.; Motor Shop, Philadelphia, Pa.; Westminster Automobile Co., St. Louis, Mo.; Standard Automobile Co., Pittsburgh, Pa.; Amos-Pierce & Co., Syracuse, N. Y.; Thompson Schoeffel Co., Rochester, N. Y.; Gus Boyer, San Francisco, Cal. Member A. L. A. M.  
Send for Catalogue.

## CORRECTION

In the advertisement of the Mitchell Motor Car Co., on page 40, in our issue of Dec. 28, two errors appeared wherein the

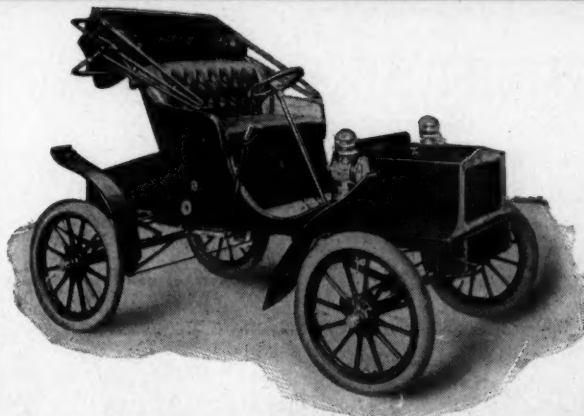
**Mitchell Model B-4 Touring  
Car, quoted at \$1250, should  
have read \$1500.**

Also in the same advertisement

**The mention of a 2-Cylinder  
Touring Car was wrong. The  
1906 Mitchell line includes  
two 4-Cylinder Touring Cars,  
Model B-4 and Model D-4, at  
\$1500 and \$1800 respectively.**

## MOTOR AGE

# GALE



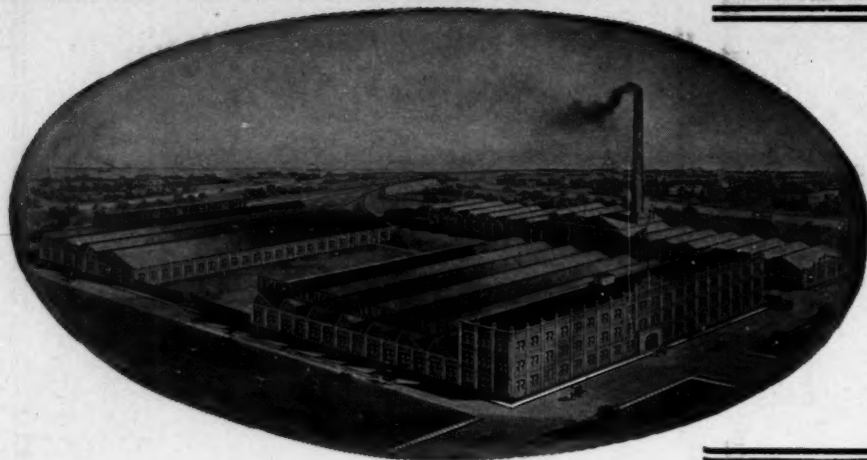
1906 Model "D" **\$650** Minus Top \$600

WHEEL-POST CONTROL, ROLLER BEARINGS to rear axle  
ANY TIRES, 28x3, Pneumatic, Solid or any other kind  
Equipment includes Lamps and Horn

**OUR 1906 LINE** in addition to Model D, will consist of two other models yet to be announced

Dealers who know the value of handling a **GOOD CAR** at a **LOW PRICE** will write us at once regarding 1906 agencies

**WESTERN TOOL WORKS GALESBURG ILLINOIS**



The output of COMPLETE FRONT and REAR AUTOMOBILE AXLES of this plant exceeds the capacity of all competition combined.

## THE AMERICAN BALL BEARING CO.

L. S. & M. S. Railway and Edgewater Park  
CLEVELAND, OHIO, U. S. A.

## 8,000 MILES

Perfect Satisfaction,  
Never Breaking

HOTEL TOURAINE  
BOSTON

July 3d, 1905.

BRAMPTON BROS., Ltd.,

Dear Sirs—It is a pleasure for me to say that the chains made by you and used on the world's tour have given perfect satisfaction, never breaking. They have carried us over New Zealand's mountains, the bad roads of Australia, and through many countries. The set sent you herewith has been used for 8,000 miles.

Very truly yours, (Signed) CHAS. J. GLIDDEN.

Weight of car, baggage and passengers, 4200 lbs.

### 1906 CARS

Do you want this kind of chain on your 1906 car? You can have it if you ask the manufacturer to fit the Brampton chain to your car and with no extra expense to you or the manufacturer. All standard sizes in stock to fit American and Foreign cars.

Catalogue mailed on request.

## CHARLES E. MILLER

Manufacturer, Jobber,  
Exporter and Importer

Home Office, 97-99-101 Reade St., New York City

BRANCHES  
Broadway and 38th St., New York. Philadelphia—318-320 N. Broad St.  
Boston, Mass.—302-304 Columbus Av. Cleveland, O.—408 Erie St.

## HOTEL NORMANDIE

NEW YORK CITY Elmer E. Almy, Prop.

*The noonday rendezvous  
of the Automobile trade*

European Plan.

Very Center of  
Amusement and  
Business District.

Broadway and  
38th Street

Long distance tele-  
phone in all rooms.  
Single rooms with  
bath and in suites.

Restaurant noted for  
the excellence of its  
cuisine, its efficient  
service and moderate  
prices.

\$1.50 PER DAY  
AND UPWARDS



OSBURN HOUSE, Rochester, N. Y.

Elmer E. Almy & Co., Props. : : : American Plan.



Tire Fastener for Heavy Work

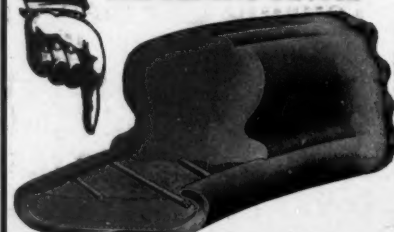
Save Time, Money and Trouble and  
GET MOST WORK out of

## MOTZ CLINCHER TIRES

Solid Rubber or Cushion Types  
and made to fit any standard clincher  
rim in which pneumatic tires are used



OBSERVE THE  
FASTENING DEVICE



Tire Fastener for Ordinary Work

RESILIENT AND  
"THERE WITH THE WEAR"

The Motz Clincher Tire & Rubber Co.  
AKRON, OHIO, U. S. A.



# We Have Spared No Effort

to make the 1906 Duquesne Car as perfect as human skill can make it. The four-cylinder, air-cooled motor will take you anywhere a car can go, as fast as it is safe to travel. The planetary transmission gear is distinctly superior to others now on the market, and gives two forward speeds and reverse. Something not to be found on any other American car is our starting device—we use no crank, but start the motor by a foot lever. Full description of this superb car is in our booklet—may we send it?

**DUQUESNE CONSTRUCTION CO., JAMESTOWN, N. Y.**

## Automobile Headquarters

# CADILLAC HOTEL

Best location in New York  
Three minutes from Automobile Show  
Four hundred rooms  
Absolutely Fireproof  
Three hundred private baths  
Subway at our door

**WALLICK BROS.**  
TIMES SQUARE NEW YORK



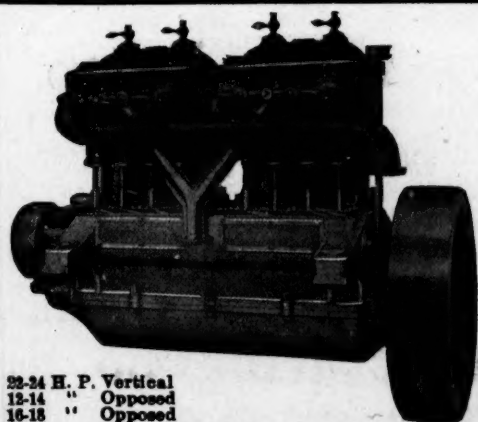
## Swinehart Tires

One proof that our tire is superior to any, is the fact that dealers are pushing our tires although we do not allow them as great a commission on sales as they get on other tires; neither do they ever expect any revenue for repairs after our tires are applied.

We have hundreds of testimonials from users of Swinehart tires on sixty different types of cars, claiming that Swinehart tires do not injure their machinery. This proves either that our tires are superior to other solid tires or that there are plenty of substantially built cars now on the market.

**The Swinehart Clincher Tire & Rubber Co.**  
AKRON, OHIO

New York City, 1773 Broadway Chicago, 1208 Michigan Boulevard



22-24 H. P. Vertical  
12-14 " Opposed  
16-18 " Opposed

## "DON'T DELAY" PLACING YOUR ORDER FOR BEAVER MOTORS

For your 1906 cars. Efficient, light and durable. Our prices will interest you. Performance and deliveries guaranteed. Correspondence solicited.

**BEAVER MFG. CO., Milwaukee, Wis.**

**Self-Starting from the Seat**  
(With Make and Break Ignition)

# "Matheson"

"America's Finest Motor Car"  
1906 Models { 40-45 H. P.  
60-65 H. P.

Our New Factory now building, in..... **WILKES-BARRÉ, PA.**  
will be one of the largest and most modern automobile plants in existence. We will  
move into this new plant about January 1, 1906. Address until then.....

**MATHESON MOTOR CAR CO.**  
Holyoke, Mass.

## Hill Precision Oilers

The first requisite in a mechanical oiler is **efficiency**. To be **efficient**, it must possess absolute reliability, and give perfect and unfailing service under all conditions.

The second requisite is **economy**.

The Hill Precision Oiler combines both of these requisites—and the feature of economy is not confined merely to the saving in oil used, but in cutting out from the repair bill those items that always result from faulty lubrication. Read this:

### THE OSCAR LEAR AUTOMOBILE CO.

Automobiles  
Corner Fourth and Gay Streets

Columbus, Ohio, September 5, 1905.

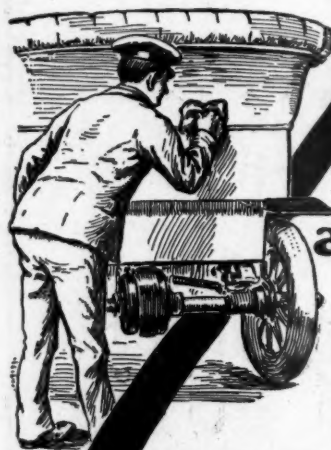
The Steel Ball Co., Chicago, Ill.

Gentlemen:—We desire to express our sense of the great assistance your Oiler was to us in our recent 6-day endurance and economy run at Long Branch. In a run of 3,202 miles made in a little over 6 days, we only used 10 gallons of oil and your oiler delivered the oil in an unfailing measure as set. Its operation was perfect at all times. The importance of all this we fully realize and its help in getting this record for our FRAYER-MILLER car.

Yours truly,  
THE OSCAR LEAR AUTOMOBILE CO.

### THE STEEL BALL COMPANY

840 Austin Avenue  
CHICAGO ... .. U. S. A.



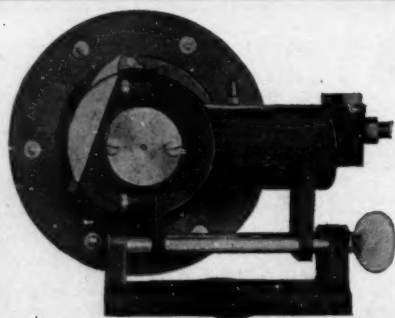
**Keep  
it new  
and bright  
with  
the new  
cleanser**

## MOBO

Elbow grease and common soap will not preserve the polish of an automobile. It may remove the dirt—but the shine goes too. Mobo is unlike any other substance for cleaning automobiles, preserving and restoring the original lustre; removing grease and travel stains. Mobo is a preserver—it prevents blistering and cracking of the painted surface. Absolutely harmless to the hands. Can be used on the leather work of the automobile (also harness) as well as the wood and metal work.

Put up in 2 lb. and 8 lb. cans; also in tubs, half barrels and barrels. If your dealer hasn't it—tell us, we will see that you do get it.

**JOHN T. STANLEY**  
638 W. 30th St. NEW YORK



## The P. T. C. Power Tire Pump

It is designed to inflate pneumatic tires by **POWER** driven by friction from fly wheel. Always in place. Started by turning a screw. Write for circular.

## The Pacific Tucking & Manufacturing Co.

471-3 18th Street BROOKLYN N. Y.





## Start the New Year Right With the **AUTO-METER**

"It Tells How Fast"

ON YOUR DASHBOARD

"It Tells How Far"

If you want to know with absolute certainty just what your car is doing in the way of speed at any time, the Auto-Meter's Speed Dial will tell you.  
If you want to know with absolute certainty just how far your car has traveled on a trip, the Auto-Meter's Trip Dial will inform you.  
If you want to know with absolute certainty just how far your car has traveled after the season is over, the Auto-Meter's Season Dial will show you.  
Automobiling is not enjoyed to the fullest, until there's an Auto-Meter on the car.

Write for Catalogue and "Indisputable Evidence"

**Warner Instrument Company** 55 Roosevelt Avenue  
**BELOIT, WIS.**

NEW YORK OFFICE: 1691 Broadway BOSTON OFFICE: 143 Federal Street CHICAGO OFFICE: 804 Steinway Hall  
NORTHERN CALIFORNIA: G. P. Moore & Co., San Francisco SOUTHERN CALIFORNIA: Heineman & Pearson, Los Angeles

# PIERCE

**The Pierce Arrow** is an American car—the best American car that has been made—better in proportion to its cost than any imported French car—better for American use, American roads and the American motorist. It offers satisfaction, minimum of expense in running, perfect service and can be operated by the owner.

*Catalogue and descriptive literature on request*

**THE GEORGE N. PIERCE CO.**

Members of Ass'n Licensed Auto Mfrs.

**BUFFALO, N. Y.**



**BERKSHIRE AUTOMOBILES**  
*High Class Touring Cars*  
*Made and Tested in the Berkshire Hills*

**1906 Models Ready December 15th.**

16 H. P. \$2,000.

25 H. P. \$2,500.

40 H. P. \$4,500.

**Douglas Andrews Company,**

*SELLING AGENTS.*

**1623 BROADWAY, NEW YORK.**

HAVE YOU SEEN THE NEW

# KOKOMO

MECHANICALLY - ATTACHED

**AUTOMOBILE TIRE?**

**It is just what you have been looking for.**

Quickly attached and detached.  
Creeping and Rim Cutting entirely avoided.  
Made of the very best material and workmanship throughout.  
Write us for full particulars.

**KOKOMO RUBBER CO.,**  
**KOKOMO, IND.**



*When Writing to Advertisers, Please Mention Motor Age.*

# "TRIUMPH" GASOLENE GAGE



For tanks with or without pressure, to show quantity of gasolene. Simple, reliable and of superior workmanship.

The "Triumph" Gasolene Tank Gage has been adopted as part of the regular equipment of all "Pierce Great Arrow" Cars, also Northern Manufacturing Co., Detroit, Mich., for the season of 1906.

See that your new car has a "Triumph" Gage.

Boston Auto Gage Co. BOSTON MASS.

NEWTONVILLE, MASS., Dec. 20, 1905.

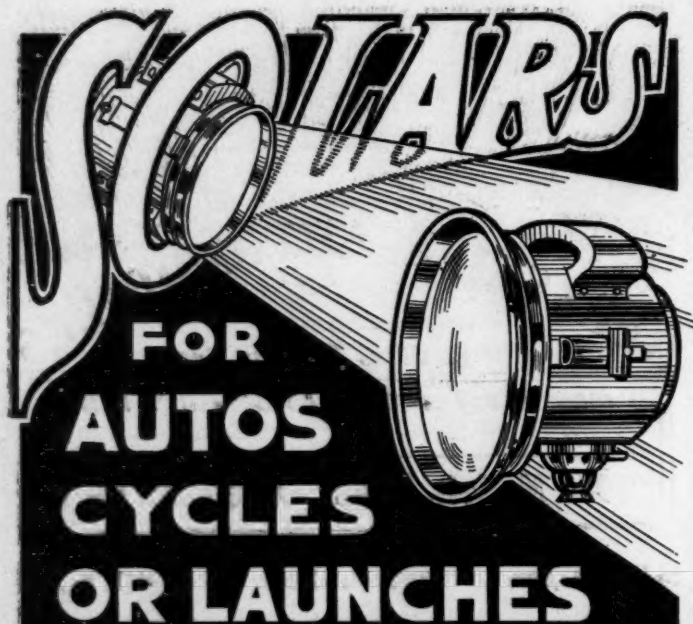
BOSTON AUTO GAGE COMPANY:

Gentlemen:—In reply to your inquiry as to my opinion of your "Triumph" Gage for Gasolene Tanks of automobiles, will say that I have used several of them on steam cars I am building, and that they work admirably, I running them under pressures up to 150 pounds.

I consider the "Triumph" Gage indispensable as a part of the equipment of a car where the gasolene is maintained under pressure, in fact, no first-class car can be considered complete without a reliable gage to show the quantity of gasolene in the tank, and the "Triumph" Gage is the only one I have ever seen that would answer this purpose.

Yours very truly,

LOUIS S. ROSS.



**SOLARS**  
FOR  
AUTOS  
CYCLES  
OR LAUNCHES

MR. DEALER: Why not handle a line that you know will satisfy your customers instead of taking chances on "just as good" lamps. YOUR profit is as MUCH or MORE on Solars, and your customers "stick." Write us to-day for prices on our 1906 line.

**BADGER BRASS MFG. CO.**

New York Office, 11 Warren St. KENOSHA, WIS.

## GEECEE STORAGE BATTERY

UNEQUALED FOR

**Automobile and  
Motor Boat  
Ignition and  
Illumination**

**HIGHER IN CAPACITY  
AND VOLTAGE THAN  
ANY WET BATTERY  
NOW ON THE  
MARKET.**

Acid (Electrotype) in suspended form, made dry by a secret process, can't spill or leak. Perfectly safe in any position. No danger of acid-eaten clothes, connections, etc. As easily recharged as a wet battery. A layman can do it as well as an electrician when he uses the "Geecee" charging outfit. Full directions with each Battery and outfit. By buying the "Geecee" you buy miles, and you will know just how far you can go. The same battery that operates your ignition outfit will also furnish the required current to operate your limousine light or a search light on your motor boat.



**Royal Battery Co., Mfrs.** 143 CHAMBERS ST. NEW YORK

**NATIONAL SALES CORPORATION**

FACTORY SALES MANAGERS

256 Broadway : : : NEW YORK

## FAST COLOR AUTOMOBILE TOPS THAT NEVER LEAK

CAN BE MADE OUT OF THE

## KOKUK FABRICS

**A GUARANTEE**

With All Goods  
Bearing This

**TRADE MARK**

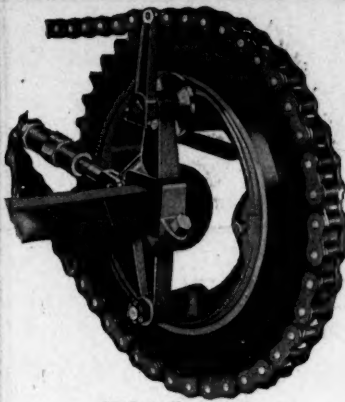


MANUFACTURED EXCLUSIVELY BY

**F. S. CARR**

74 Pearl Street, BOSTON, MASS.





Made in three sizes

**GARFORD PARTS**

Usually when one speaks of automobile parts the impression is conveyed that they are of the "cheap and nasty" variety. Garford parts are different. They will be found on some of the very highest grade touring cars for 1906—cars listing above \$3,000. We cannot execute any further orders this season. Our factories, however, will have greater capacity next season.

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We can promptly execute orders for steering gears, brakes, sprockets, motor hangers and other parts for motor wagons. They are suitable for all classes of commercial power vehicles, from the lightest to the heaviest. They are not "freak" components of a wonder working vehicle. They enjoy the rare distinction of having been thoroughly tested for some years past in the most varied and severe kind of commercial service. Circulars 2, 3, 5, 10 and 11 give information concerning them.

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Sales Manager: **HAYDEN EAMES, Cleveland, O.**



Pinion and Sector Type also supplied.



Model E. 30 H. P. Glide

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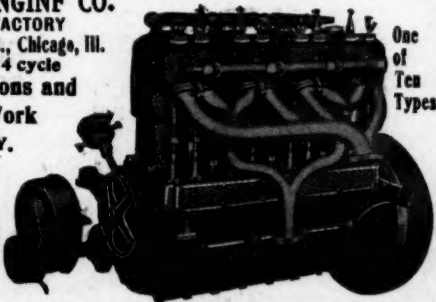
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Designs, Specifications and  
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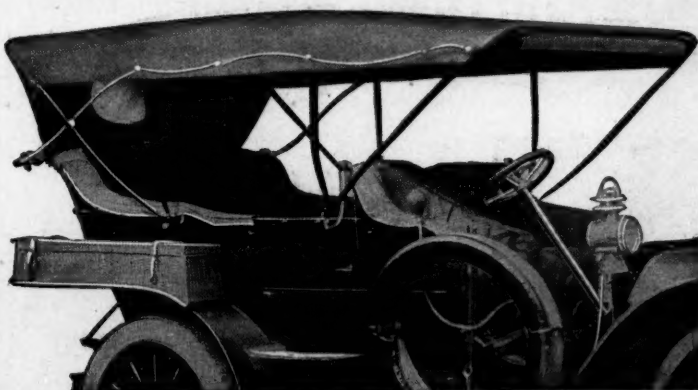
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WITH TONNEAU OPEN

THE above illustrations show one and the same car. A Wayne Model D fitted with the Artz Folding Tonneau. The tonneau goes on in place of the deck box without cutting or altering the car body in any way. Can be opened or closed in ten seconds; no part detached; strong, comfortable, noiseless; keeps clean when closed and adds only 50 lbs. to the car. We furnish it complete, delivered and attached to your car for \$100.

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for 1906 will be **single-acting**, raising the car on the **downward** movement of the lever **only**—the **upward** stroke being perfectly **free**. These are the only Jacks on the market that may be operated conveniently on any automobile without interference from the body of the car. Adopted by every leading manufacturer and operator.

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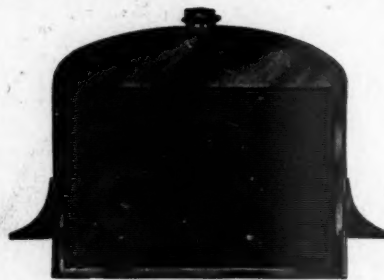
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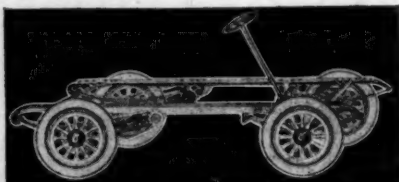
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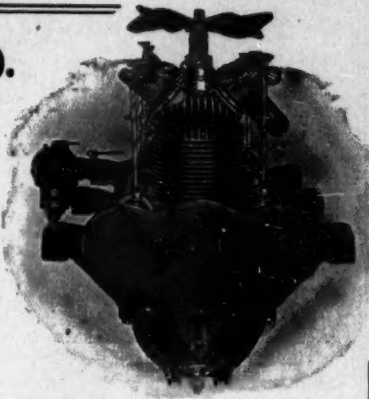
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Accurate Construction

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 Fifty thousand pounds of Ingots furnished for the 1906 Cars.

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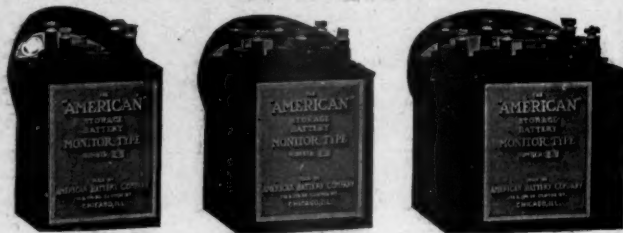
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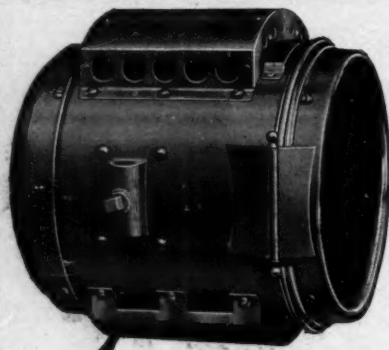
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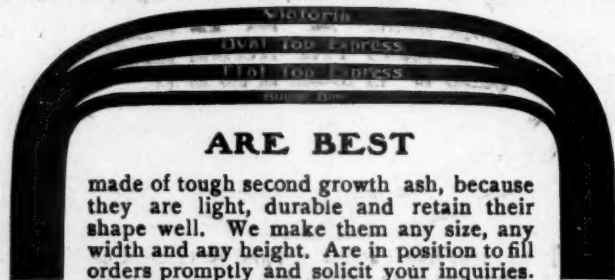
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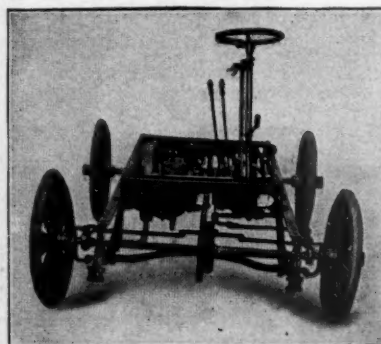
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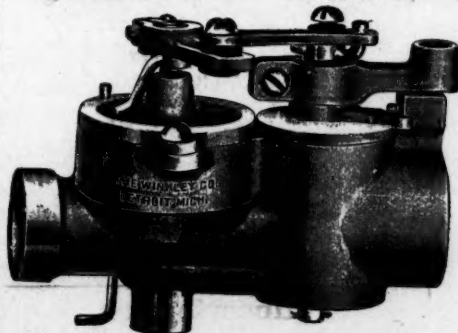
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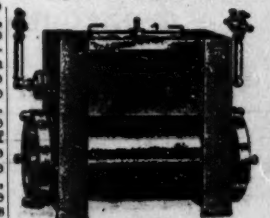
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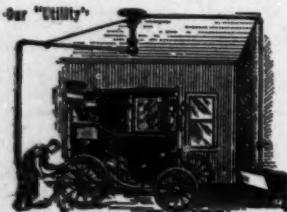
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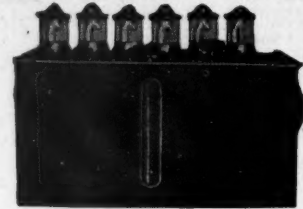
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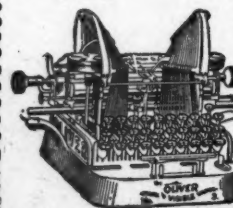
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Prevents the Finish from Cracking or Staining

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**\$2 PER GAL. MAT. WEIS**  
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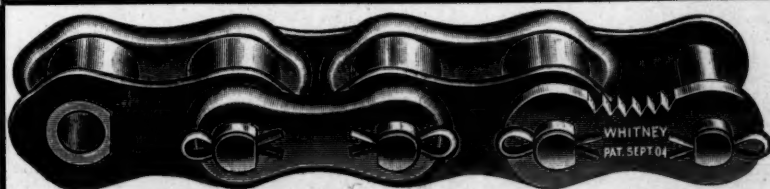
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and you will be warm all over.

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Does the Trick Right.

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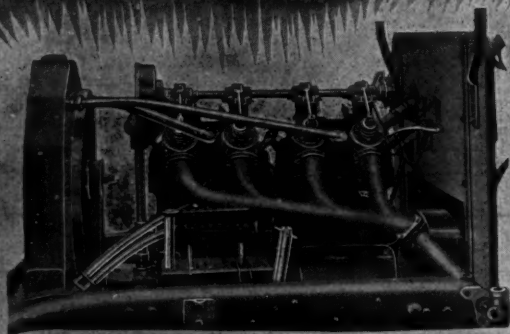
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USED BY THE LEADERS

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An ordinary Welch Engine was taken from stock with no special preparation, and delivered to the electric mains, on runs of one or more hours' continuous duration, 32160 Watts, or 43 Electrical Horse Power. The engine was connected through the transmission and two universal joints with a General Electric Generator, and readings were taken with Weston instruments. The addition of 20 per cent dynamo and 3 per cent transmission losses, bring the ACTUAL available horse power produced to 55.9. The above test proves the engine to be capable of developing and maintaining for long periods 50 or more horse power at a comparatively moderate speed. Note the LOW losses in our transmission system. The above tests were conducted with ordinary stove gasoline 68°, and our standard jump spark ignition equipment.

**Welch Motor Car Co., Detroit and Pontiac, Mich.**

The above statements to our own knowledge are absolutely true and correct in every way. (Signed)

A. R. WELCH.

FRED S. WELCH.

Sworn and subscribed to before me, a Notary Public, in and for Oakland County, Michigan, Oct. 26, 1905.

F. S. LOCKWOOD, Notary Public.

My commission expires Jan. 23d, 1909.



Combination Volt and Ammeter, Model R

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**Electrical Measuring Instruments for use in**

**Electrical Carriages and Charging Stations**

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## CUT THIS OUT AND MAIL IT TODAY!

MOTOR AGE, 309 Michigan Ave., Chicago.

Enclosed find \$3, for which send me as per your special offer, **Motor Age** and **Motor** for one year, including **Brookes' Automobile Handbook**.

Name.....

Address.....

When Writing to Advertisers, Please Mention Motor Age.



Do It Now!

## Phoenix Auto Supply Co.

3932 Olive Street, St. Louis, Mo.

A. L. Dyke, Mgr.

(A. L. Dyke is no longer with A. L. Dyke Auto Supply Co.)

Special Tires and Inner Tubes, 15% less than others. See the new Leather Tire and Woodworth Tire Protectors.

Agent for C. O. T. Cement and Acid Vulcanizing substitute.

8 h. p. Single Cylinder Engines, \$93; Transmissions, \$35. Special prices while they last.

Tops for all makes of cars, cheaper than others.

Tires repaired and retreaded—send them to us. The "Do-Right" Storage Battery, 40 amp, 60 vit., \$15.00.

The "Do-Right" Spark Plug, \$1.00.

Whistles to work from the exhaust, \$5 to \$25.

Scott Mufflers, worn like sweaters, 75c to \$1.50.

Auto Clothing, Caps, etc., Weed Chains, Carbureters, Coils, Speedometers, etc., etc.

### LOOK—A BARGAIN.

Cars shown in these ads will be the pick of our list.

Cadillac, 1904 model. Owner bought it late in 1904;

run it about 600 or 800 miles. They went to Europe and have just returned. It was stored

and not used since last fall a year ago. Has Tonneau. Guaranteed to be as good as new

and to look new. If not, your money will be refunded. Price only \$375. Better investigate.

We have others. Tell us what you wish to pay

and kind of car you want.

Send for our Catalogue and Supplement.



## NEW GILBERT TIRE CASE

Patented

Dec. 27, '04

Dec. 28, '04

Dec. 27, '04

Jan. 10, '05

### NOTE.

Proof against the man with the hose. Tire always dry.

### PRICES:

Enamel Duck, any size, \$4

Fabric Leather, " " \$5

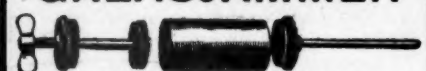
For sale everywhere.

Catalogue on request.

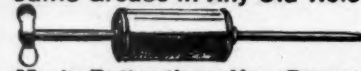
## GILBERT MFG. CO.

New Haven, Conn.

## "GREASJAMMER"



Jams Grease in Any Old Hole



Made Better than You Expect  
All Metal Extra Heavy  
Large Capacity

SENT PREPAID FOR \$1.20

**THE MOTOR CAR SUPPLY CO.**  
1427 MICHIGAN AVENUE, CHICAGO

"EVERYTHING FOR YOU AND YOUR AUTO"

## PHELPS GASOLINE PUMP

PATENTED

for Automobiles

Works equally well with kerosene, insuring a steady pressure. Readily attached to any steam vehicle. Only one pint of gasoline under pressure at any time. Pumps what fuel is required—no more, no less. Maintains any desired pressure automatically. No bypass or overflow valve to return surplus. No stuffing box to leak. No auxiliary gasoline pump required. No air pumping necessary. No noise, no leaks, no waste, no trouble, no danger. Send for descriptive circular and letters of commendation.



## BOSTON AUTOMOBILE EXCHANGE

173-177 Berkeley St., Boston, Mass.



## "E. & J." LAMPS GAS AND OIL SIDE-LIGHTS

Copy of our 1906 Catalogue mailed on request

The EDMUNDS & JONES MFG. CO.  
DETROIT, MICH

## WITHERBEE



### Storage Batteries

are used and endorsed by forty-two of the leading automobile manufacturers.

Specify the WITHERBEE and avoid ignition trouble. Satisfaction guaranteed or purchase money refunded.

Sold by the leading jobbers. Write for descriptive pamphlet.

WITHERBEE IGNITER CO.

541 West 43d St.

NEW YORK

## INSURANCE

Automobile, Fire and Liability  
Insurance at Lowest Rates

Send or call for particulars

JAMES W. EASTLAND First National Bank Bldg.  
CHICAGO, ILL.



All Leading Automobile Manufacturers Use this Cushion Spring.

Ask for Samples and Prices.

National Spring & Wire  
Company, Albion, Mich.

## PACKARD ENAMELED IGNITION CABLES NEVER DISAPPOINT

They are giving entire satisfaction to over 100 high-class automobile manufacturers. Will you permit us to convince you of their worth?

PROOF AGAINST HEAT, GREASE, OILS and WATER

THE PACKARD ELECTRIC COMPANY  
WARREN, OHIO, U. S. A.



## THE SUPERIORITY OF AMERICAN COILS

is widely known

WE MAKE ALL STYLES  
Neat, Compact, Efficient  
Write for catalog showing  
our full line of coils, plugs,  
ammeters, switches, dyna-  
mos, etc.

American Coil Co.  
FOXBORO, MASS.

Pacific Coast Branch, 305  
McAllister St., San Francisco

No. 11 Dash Coil

## Automobile Tire Protectors

For the Prevention of

Skidding, Punctures and Wear

LEATHER TIRE GOODS CO.

Newton Upper Falls, Mass.

E. F. LESTER, Mfr.



FAYETTEVILLE, N. Y.



## Eclipse Tops

LOOK BETTER  
WEAR BETTER  
MADE BETTER  
ARE BETTER  
than any others.  
It's an old story with  
us. We have been  
making good tops  
practically all our  
business lives.

Write for catalogue,

Eclipse Buggy & Mfg. Co., Fort Wayne, Ind.

## GASOLINE SELF MEASURING OUTFITS

For the Automobilist and the Garage.

Guaranteed non-evaporative, airtight, no-leakage.  
From tank into automobile reservoir.  
Tank underground—Pump in building.  
Write for Catalog "M"—it will surely pay you.

WESTERN OIL PUMP CO.  
2400 Kosciuszko St., ST. LOUIS, MO.

## ORIGINAL MANUFACTURERS OF AUTO TOP MATERIALS

We are headquarters for water-proof materials  
of all kinds and make a specialty of materials  
used in the manufacture of Auto Tops, Storm  
Curtains, Slip Covers, etc.  
Write for samples and price list.

L. J. MUTTY CO., Boston, Mass.

## CANDY CARBIDE

For FRENCH AUTO LAMPS (Impregnation dans le vide)

Packed only in 10 lb. cans. Price \$2 each.  
Discount to dealers in case lot of 12 cans.

SOLE MANUFACTURERS  
ACETYLENE GAS ILLUMINATING CO.  
105 WALKER STREET NEW YORK

THE SOLVAY PROCESS COMPANY'S  
"KAL-KRYSTAL" makes the best non-freezing solution for Automobile use. Neutral and non-corrosive. Stands 81 degrees below zero Fahr. Put up in 10-pound cans. Makes 2 gallons of solution ready for use. For sale by all Automobile Supply Houses.  
CARBONDALE CHEMICAL CO.  
739 UNITY BLDG., CHICAGO

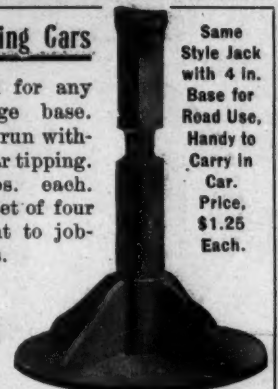
## Jack for Storing Cars

Can be used for any purpose. Large base. Engine can be run without danger of car tipping. Lifts 2,500 lbs. each. Guaranteed. Set of four \$5.00. Discount to jobbers and agents.

Address

J. Q. SHUNK

Bucyrus, O.



Same Style Jack with 4 in. Base for Road Use, Handy to Carry in Car. Price, \$1.25 Each.

## Radiators: Hoods Dashes, Etc.

THE MAYO RADIATOR CO. NEW HAVEN CONN.



## SURETY

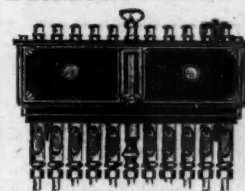
Messrs. Clemens & Mers were sure of the four No. 4 "Sta-Rite" Plugs which fired 850,000 charges in 24 hours—distance 1,094 miles. You can always be just as sure of any of the 47 sizes of improved "Sta-Rites" (six types). Insist upon having "Sta-Rites" in your new car and save bother.

THE R. E. HARDY CO.

225 West Broadway, New York City

Garden Show Space, No. 78. Armory Show Space, No. 61. Coliseum Show Space, No. 178.

## A LUBRICATOR FOR ANY CAR, ANY SYSTEM



An automatic pressure feed oiler instantly converted into GRAVITY FEED. Each sight feed in itself an automatic pump equally well used with any system of lubrication.

Made with any number of feeds. Write for circular.

Patent Pending.

Manufactured by

J. T. PEDERSEN, 642-644 First Ave., N. Y.

## Truffault-Hartford Suspension

Whether you own the lightest Runabout or the heaviest Touring Car, you cannot afford to be without it. Cars under 1500 pounds, \$40; cars over 1500 pounds, \$60; 4 suspensions.

## HARTFORD SUSPENSION CO.

89 Vestry Street, NEW YORK CITY

ALUMINUM, PHOSPHOR BRONZE,  
BEARING BRONZE AND BRASS  
CASTINGS FOR AUTOMOBILES

HOFELLER BRASS FOUNDRY CO.

BUFFALO, N. Y.

READ MOTOR AGE ... \$2.00 per Year

When Writing to Advertisers, Please Mention Motor Age.



## RELIABLE GUIDES are the HAM LAMPS

### The TOURIST for 1906

is the greatest light-producing oil lamp ever made.

#### SEE THE LENS?

If your car is equipped with TOURIST Lamps, you don't stop when the acetylene lamps fail you, as the way will still be lighted with reliable light. Light that won't blow out or jar out.

You can save yourself from lamp troubles by insisting that your car is equipped with HAM Lamps.

Write for booklet showing complete line.

**C. T. HAM MFG. CO.** Rochester  
New York

## This is NOT A FAIRY TALE

We guarantee to increase the spark in your cylinders by

**ONE HUNDRED PER CENT**

Through our **PATENTED**

### Steel Armored Ignition Cable

Adopted by the Leading European Firms

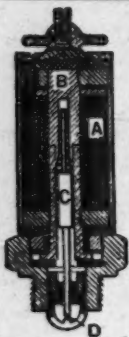
It is sold cut to the required lengths complete with all terminals. Send us your requirements. Do it now!

**HERZ & CO.,** Civil Engineers  
187 Elm St., New York  
The largest manufacturers of Ignition Material in America.



A high class Coupe Top. Fits Olds Standard Runabout, can be attached in thirty minutes and detached in ten. Front glass hinged and can be raised at will. Price, \$60.00. Write for full description.

**The Fellwock Autotop Co.,** Evansville, Ind.



## LOW TENSION MAGNETO THE GARON SYSTEM OF IGNITION

Combines all the good points of the Jump Spark and Make and Break, and is perfectly reliable. Easily applied to any engine, whether originally built for jump spark or make and break ignition.

*Absolutely guaranteed*

*Let us show you how perfectly it works*

**ASTER CO.,** 1591 Broadway, NEW YORK CITY



### POCKET Battery Ammeter

0 to 30 Amperes

Indicates in any position and in either direction of current. In testing single cells, the cord is not necessary.

Price \$3.50

**ELDRIDGE ELECTRIC MANUFACTURING CO.**  
Springfield, Mass.



**COOLERS FENDERS**  
**HOODS TANKS**  
**BRISCOE MFG. CO.**  
DETROIT, MICH. U.S.A.  
EASTERN FACTORY, NEWARK, N. J.



### THE U. S. JACK WITH UNIVERSAL HEAD LIFTS ANY WEIGHT CAR UP TO 6000 Lbs

A child can operate it twice as fast as a man with other jacks. Impossible to get out of order. Complete weight 6-14 lbs. Thumb screw prevents rattle. Write us if your dealer has none.

**U. S. JACK CO.,** 352 S. Claremont Av. Chicago

### Atwater Kent Timer



"No Webble."  
"No Adjustments."  
"Two Bearings."  
"Contacts Run in Oil and Entirely Enclosed." "Durable Electrically and Mechanically." "Copied from None."

**Atwater Kent Mfg. Works,**  
115 North Sixth St. Philadelphia, Pa.

### BESTOGO STORAGE BATTERY

Essentially different from other Lead Batteries

SEND FOR CATALOG

**Miller Signal Co.,** 302 JACKSON BOULEVARD, CHICAGO

### The IGNITION PROBLEM is SOLVED

in the "Lacoste" High Tension Magneto for Jump Spark Ignition

We guarantee this device to be **ABSOLUTELY PERFECT.** We have done the experimenting.

**No BATTERING. No COIL. No COMBUSTION.**

*Everything for Electrical Ignition.*

**LEON RUBAY, Sole U. S. Agents, 140 W. 38th St., N.Y.**



### DIXON'S GRAPHITE

Motor Lubricants

Interesting booklet and samples FREE

**Joseph Dixon Crucible Co.**  
Jersey City, N. J.

### C. O. T. ACID CURE SOLUTION AND VULCANIZING FLUID.



WHY worry over a puncture when C. O. T. Acid Cure Solution will stick a patch while you sleep, and fill up a cut in your auto shoe by using it to join a piece of rubber size of cut. Not loosened by heat. Plain rubber patches both round and oblong.

**CHAS. O. TINGLEY & COMPANY**  
Rahway, N. J.  
Beckley-Ralston Co.,  
Chicago, Ill., West. Dis.

**Phoenix Auto Supply Co.,** St. Louis, Mo.,  
**A. L. Dyke, Mgr.,** Southwestern Agents.

## DIAMOND WRAPPED TREAD TIRES

**DIAMOND RUBBER CO., AKRON, OHIO**

### VALVELESS-PUMPS WITHOUT STUFFING BOXES OR SPRINGS

All Your Oiling Troubles Eliminate!  
Any Number of Feeds  
Write for Catalogue

**Madison-Kipp Lubricator Co.,** Madison, Wis.

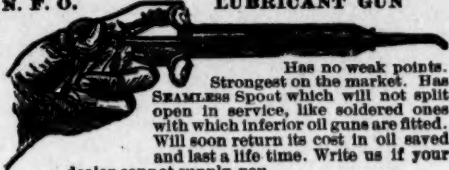
### MOTOR CAR SPECIALTIES and SUNDRIES

WE SELL EVERYTHING  
WRITE FOR CATALOG

**THE AUTOMOBILE EQUIPMENT CO.**  
252 Jefferson Ave. Detroit, Mich



**N. F. O. LUBRICANT GUN**



Has no weak points. Strongest on the market. Has SEAMLESS Spout which will not split open in service, like soldered ones with which inferior oil guns are fitted. Will soon return its cost in oil saved and last a life time. Write us if your dealer cannot supply you.

New York & New Jersey Lubricant Co.  
14 Church St., N. Y. 79 9th St., San Francisco



**Your \$5.00 Back**

If after 30 days' trial you don't feel absolutely sure the

# SKINNER

**COMPOUND AIR PUMP**

is the best automobile tire pump, and the easiest to operate, that you have ever tried or ever seen.  
Compact, light and convenient for carrying.

**\$5 Express Prepaid**

SKINNER & SKINNER, MFRS.  
4154 Indiana Ave. Chicago

# ALUMINUM

*Aluminum  
Automobile  
Parts a Specialty*

The Pittsburgh Reduction Company  
Pittsburgh, Pa.

**WE ARE SOLE IMPORTERS OF**


## NIEUPORT IGNITION OUTFIT

The Best in the World.

Magnetos, Coil, High Tension Distributor, Nieuport Spark Plug, Storage Battery, Ignition Wire

ALBERT CHAMPION CO., 541 Tremont St., Boston, Mass.

**SPRINGFIELD TOPS**  
3, 4, and 5 Bow  
Aluminum Bodies



Springfield Metal Body Co.  
72 Birle Ave.  
Brightwood  
SPRINGFIELD, MASS.

## AUTO TRIMMINGS

The right kind that puts a high grade appearance to a high grade car. We make 'em. Space No. 119 N. Y. Show.

**AUTO BRASS & ALUMINUM CO.**  
FLINT, MICH.

Special Design - Finest Quality - Built-to-Order

## BODIES AND TOPS

C. P. KIMBALL & CO.  
315 Michigan Ave. Chicago

**Pardee-Ullmann Co.**

Agents for

# PAGKARD AND FRANKLIN

1218-1220 Michigan Avenue  
Phone 557 South CHICAGO, ILL.

**The McDUFFEE Automobile Co.**

Distributors for

Stoddard-Dayton and Royal Tourist

Phone South 1297  
1449 Michigan Ave. CHICAGO

**Cadillac Automobile Co. of Illinois**  
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# CADILLAC

Four Cylinder, High Power Touring Car  
Light Touring Cars Runabouts Delivery

**C. A. COEY & CO.**

Illinois and Eastern Iowa Agents for the

# THOMAS FLYER

Always on hand—Bargains in New and Used Cars of all descriptions :: :: PHONE CALUMET 1042  
1424 Michigan Avenue, Chicago

**SENSATIONAL PRICES**



We are closing out all short lines, together with all second hand and shop worn models to make room for 1906 agency goods now coming in—MOLINE 4-cyl., 20 h. p. side entrance, new \$1250; Moline, 2-cyl. 12 h. p. side entrance, new, \$600; Hoffman 10 h. p. tonneau, new \$400; Murray runabout, \$200; Oldsmobile, \$250; Buckboard, \$200; Gale, 8 h. p. new, \$350; Winton, \$700; and many others at sacrifice prices. We are Chicago agents for "The Moline," "Frayser-Miller," "Gale" and exclusive United States importers for the Benz, Mannheim, Germany. Call and see us or send for Catalogue.

MEAD MOTOR CO., 1243-1245 Wabash Ave., CHICAGO

## TIRE REPAIRS

All makes and types given equal attention  
Correspondence solicited

## RUBBER GOODS REPAIR CO.

89 16th St., Chicago. Phone South 1280

**LAMBERT** Friction-Drive Automobiles...

12-16-32 h. p., \$1000 to \$2000  
Write for Catalogue

**ADLAND MOTOR CO.**  
1303 Michigan Ave., Chicago

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-TOLEDO  
-HARTFORD  
-TRIBUNE  
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**EVERYTHING IN SUPPLIES**

# AUTO

FOR OWNER AND DEALER

SEND FOR CATALOGUE NO. 49

**EXCELSIOR SUPPLY CO.**  
ESTABLISHED 1876 CHICAGO

# OLDSMOBILE

Agents and Distributors for Illinois and Wisconsin

## THE GITHENS BROS. CO.

1528 Michigan Ave., Chicago  
Telephone, South 1658

**GOOD AGENTS WANTED**

# REO

SEND IN APPLICATION

## RALPH TEMPLE


309 Michigan Avenue CHICAGO

**The Importers' Company**

AGENTS FOR

## Richard-Brazier Cars

1400 Michigan Avenue CHICAGO



## Lobee Gear Pump

Well adapted for Oldsmobile and other makes. Works with any type of radiator. Easily attached. Write for prices.


**LOBEE PUMP CO.,**  
240 Terrace, Buffalo, N. Y.  
C. E. Miller, Agent,  
97 Rende St., New York  
A. L. Dyke Automobile Supply Co.  
4708 Olive St., St. Louis, Mo.

## Searchmont Cars Rebuilt

Searchmont Repair Parts of every description for sale.

## FAIRMOUNT ENGINEERING WORKS

3209 Spring Garden Street, Philadelphia, Pa.



**ROBERT VOLT-AMMETER**

For General Battery Testing—Guaranteed Tests both Volts and Amperes.

3-VOLTS 6-VOLTS  
30-AMPERES 30-AMPERES

Send for Catalogue.

**ROBERT INSTRUMENT CO.**  
58 Shelby St. Detroit, Mich.

**ORLANDO F. WEBER CO.**  
(INCORPORATED)  
Distributors for  
CHICAGO and MILWAUKEE

1522-26 Michigan Ave. Phone 1009 South  
221-26 Fourth St. Phone 2781 Main



## The "B. & S." Auto Wrench

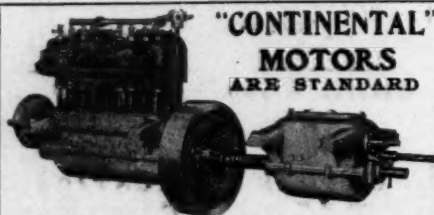
IS THE WRENCH  
WITHOUT A  
RIVAL



DOES YOUR  
1906 KIT  
CONTAIN IT?

### The Billings & Spencer Co.

HARTFORD, CONN.



"CONTINENTAL"  
MOTORS  
ARE STANDARD

Our "Continental" Motive Power Equipment, consisting of 2 or 4 cylinder motor, (10 to 40 h. p.) assembled with Clutch and Shaft Drive Transmission, is ready to put in your car.

HIGHEST EFFICIENCY LIGHT WEIGHT RIGHT PRICE  
AVOID INFERIOR IMITATIONS  
ASK FOR CATALOGUE

Continental Motor Mfg. Co. 240-244 W. LAKE ST. CHICAGO  
K. F. PETERSON, Direct Factory Representative

EVERYTHING FOR

Man, Motor and "Mechanician"

Specialties and Leather and  
Wool Winter Clothing

A. L. DYKE AUTO SUPPLY CO.

OLIVE AND WALTON STREETS  
ST. LOUIS, MO.

ROY F. BRITTON  
Pres. and Mgr.

ROY F. BRITTON  
Secy. and Treas.



Auto Top Bronzes

Bronze Separators,  
Snaps, D Rings, Nuts,  
Screws, etc. Also Mud  
Guards, Dashes, Tool  
Boxes, Guard Bolts, etc.  
C. W. COOPS CO.  
3 Appleton St., Boston, Mass.



Simplicity Automobile  
Extension  
Simplicity Cape Tops  
Spray Hoods

CHARLES P. McCLELLAN, Fall River, Mass.

Subscribe for Motor Age

## You will find

lots of advertisements of coils, plugs, circuit-breakers, switches, etc. In the papers, you will recognize them by their lack of arguments. Their products have no special merit, the makers got to dig up the most trivial points, which every article of this kind should possess.

We will send you a book of arguments free: Our new catalog.

WHAT WE HAVE:

The HERZ TIMER—16 models, to fit any make of motor: Remember: It's TOOLSTEEL vs. TOOLSTEEL.  
Bougie Mercedes—double stone.  
Herz-Distributor—1 coil for all cylinders.  
Guenet Coils. Carpenter-Interrupter.  
New prices—Single, \$16; double, \$29; triple, \$38; quad, \$50.

A line of switches of original design; contacts dust-proof covered.  
Detachable terminals.  
Wire terminals with groove.  
Special ignition cables and wires.  
Everything for the ignition.  
One grade: The Best.

HERZ & CO. Civil Engineers  
187 Elm Street, New York  
Write for free Vademecum of Ignition.

OLD Tires NEW  
New Tires Puncture-Proof

NEWMASTIC FILLING  
For Clincher and Single Tubes

Just as Resilient as a Pneumatic  
Just as Safe as a Solid Tire  
How Do We Do It?  
Write Us and Learn

NEWMASTIC TIRE CO.

1363 Michigan Ave., CHICAGO, ILL. Tel. South 1261  
ST. LOUIS, MO.

## A Swell Joint



The acme of specialization—  
the limit of excellence—is represented in our

Universal  
Joint and Brake Drum

Your closest investigation of our claims will  
PROVE that NOTHING BUT THE BEST in EVERY  
RESPECT is used. Write us TO-DAY.

SPICER UNIVERSAL JOINT MFG. CO.  
PLAINFIELD, N. J.

Direct factory representatives: K. Franklin Peterson, 166 Lake Street, Chicago; Thos. J. Wetzel, 11 Warren Street, New York.



Strength, Safety,  
Simplicity

In  
the

Springfield  
JACK and TIRE TOOL

For any car weighing from 500 to 4000 pounds.  
Price \$2.25 delivered  
For removing any Clincher Tire from 2 1/4 to 4 1/2 inches.  
Price \$3 delivered

Sold by all dealers.

THE SHAWVER COMPANY

Springfield, Ohio

### Standard Roller Bearing Co.

STEEL BALLS  
BALL BEARINGS  
Roller Bearings  
Automobile Axles

Send for Catalogue.

PHILADELPHIA

### MISCELLANEOUS.

Advertisements under this head 3 cents per word first insertion; 2 cents per word for each insertion thereafter. Ads set in any style other than regular setting, 24 cents a line first insertion, 16 cents a line for each insertion thereafter.

Special rates for continuous advertising in these columns upon application.

FOR SALE—1904 Winton, canopy top, plate-glass front, side curtains, 3 baskets, 5 lamps, Prest-O-Lite tank, supplementary springs; excellent condition; 3 new tires; \$575. F. Cregier, 1968 Deming Pl., Chicago.

NEW \$500 piano; will trade for good runabout. G. S. Davis, 208 Seymour St., Lansing, Mich.

STAMP brings new, big bargain sheet; saves 50 per cent on automobiles, motors, gears, bodies, good line engines and machinery. I buy, sell and exchange. T. S. Culp, Canton, O.

FOR SALE—Mitchell 1905 double cyl., vertical, water-cooled runabout; almost new; every bearing and part in perfect condition; original tires defective, replaced by new; demonstration preferred. \$400 cash. E. R. Young, Northwood, Ia.

FOR SALE—5 H. P. Locomobile engine, boiler, pumps, tanks, gages, etc. Everything in fine shape ready to put in runabout. \$40 cash. Box 165, Braidwood, Ill.

FOR SALE—Auto car. Seats 4; canopy top, glass front, in good condition. Address No. 329 E. Schiller St., Columbus, O.

WILL TRADE—40 acres of fine timber land in Crawford Co., Mich., on Manistee river, for a Ford, Olds or Cadillac. Dr. Schmidt, Covington, Ky.

FOR SALE—New 12 to 16 H. P., 4-cylinder, double opposed, water-cooled engine; Kingston carburetor, plugs, and timer. Cost \$500. Perfect condition. \$125 cash. Dr. Schmidt, Covington, Ky.

WANTED—To trade for a '05 Olds or Rambler runabout and pay difference between it and 1 very fine Smith shotgun and 1 new No. 8 Oliver typewriter. Both gun and typewriter have fine leather cases. Gun and typewriter cost \$235. Address J. A. Davis, Gainesville, Tex.

POSITION wanted as Manager or Supt. of garage for coming season. Thoroughly competent all branches gasoline and electric. Correspondence solicited. A. 27, care Motor Age.

PEERLESS 2-cylinder car; condition perfect and without a scratch. Everything practically new. Extra fine hand-made canopy top and plate glass front. Special brass hood. Full equipment. \$1,000 for quick cash sale. Geo. E. Cross, Louisville, Ky.

FOR SALE—At a bargain, Model N Packard in A1 condition. Chas. A. Welch, Waukesha, Wis.



**FOR SALE**—Motor cycles: Rambler, \$65; Crescent, \$95; Mitchell, 3½ H. P., \$130. New 4x4 air or water-cooled motors, \$60 Shaw Mfg. Co., Galesburg, Kan.

**FOR SALE**—Haynes-Apperson touring car; 24-horse opposed engines; canopy top; glass front; fully equipped with headlights, tools, etc. First class condition. Cost \$2,500; first check for \$1,000 takes it. F. A. Roethlisberger, Hillsdale, Mich.

**WILL TRADE** ten or twenty acres of garden land, 10 miles west of Toledo, Ohio, on inter-urban line, for automobile. H. G. Welsh, 314 North Main, Hutchinson, Kan.

**WANTED**—Manager and salesman with \$1,000 to \$2,500 cash in automobile company in eastern Iowa. Address Iowa, care MOTOR AGE.

**FOR SALE**—Packard late 1903 Model F; recently overhauled at factory. Will equip with brand new tires and sell for \$750 cash. First check takes it. H. W. Beach, Montrose, Pa.

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**THOMAS TOURING CAR**—1904 model; 3-cylinder; seats five persons; perfect condition; thoroughly overhauled by factory recently; this car was driven by the owner eleven hundred miles from Macon, Mo., to Buffalo without an accident and never missed fire once on the trip; new tires this season; I refer to the E. R. Thomas Motor Co., of Buffalo, as to condition of car; my reason for selling is that I have purchased a larger type car; price and full description on application. Address owner, William R. Compton, Macon, Mo.

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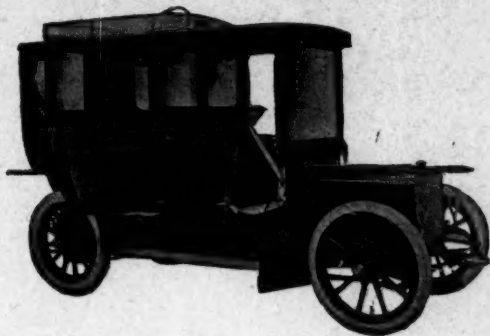
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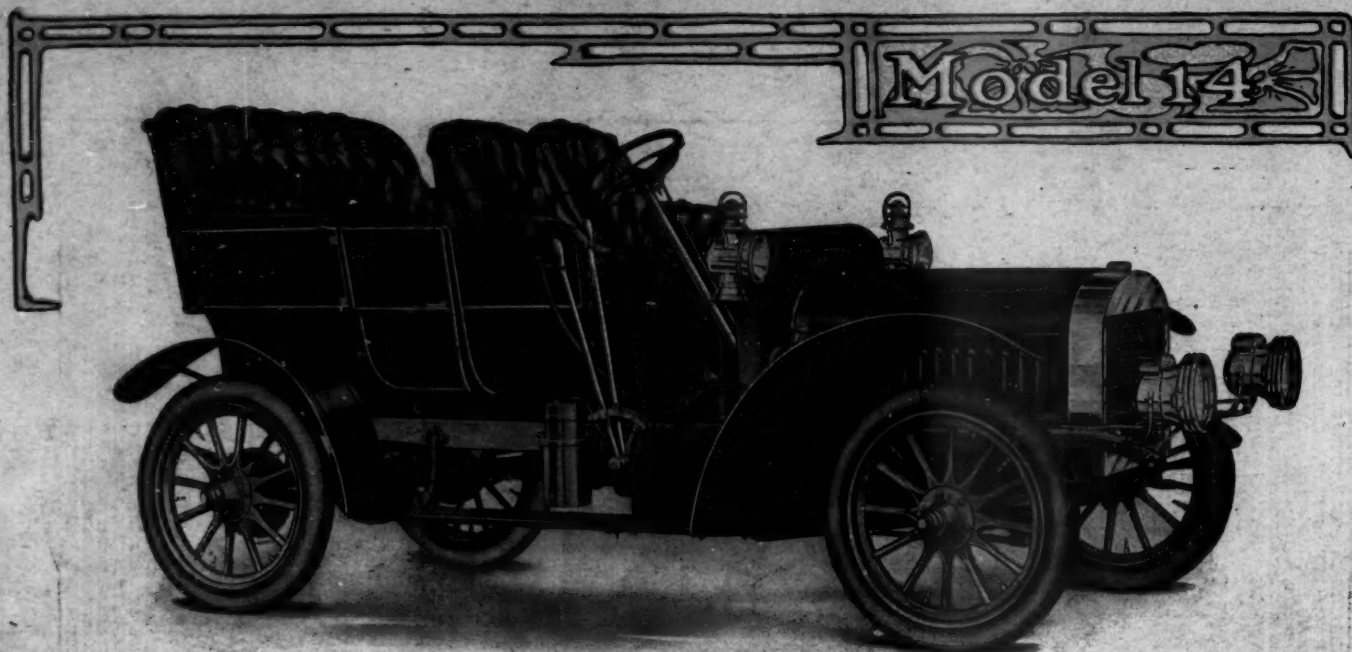
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